Les Michif Aski ~ Métis and the Land. Perceptions of the Influence of Space and Place on Aging Well in Île-à-la-Crosse

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ABSTRACT

Indigenous People in Canada are aging faster, experience more health challenges, and report higher rates of chronic conditions earlier in life compared to the general Canadian population. Métis older adults report lower health status than their First Nations counterparts. Indigenous People living in remote and northern rural communities are likely to experience unique health challenges and report poorer health status compared to those in urban centers. Indigenous lands provide vital resources that are essential for supporting the spiritual, mental, physical and emotional wellbeing of people. For many years Métis people have lived off their traditional lands for their livelihoods and cultural meanings, which have implications for their health and wellbeing. One area has received scant attention in a growing literature highlighting these disparities is aging. Little is known of the contribution of the land and place attachment on aging well among rural Indigenous people, and even less is known for the Métis people. The purpose of this research was to investigate Métis older adults' relationship with their land, exploring their perceptions of the influence of space and place on aging well in Île-à-la-Crosse, a community in northern Saskatchewan, using Community-based Participatory Action Research (CBPAR).

Research strategies used in this thesis included a community-engaged research framework, with community members of Île-à-la-Crosse. Métis older adults (55 years and older) participated in semi-structured and spatial interviews to highlight their perceptions and attachment to their land and territory; to identify changes occurring on their land; and, to determine strategies specific to their northern Saskatchewan Métis community to age well. These strategies were complemented by Geographic Information Systems (GIS).

This project elicited participants' unique sense of place and identified land-related supports and stressors that influence older Métis adults' attachment to place and being well. Key themes include: (1) "*Wuskiywiy-tan!* Let's Move!": Staying busy, Staying active, (2) "The land connects and enriches us," (3) "Tensions in our relationship with the land," and (4) "We are Métis, We are the land, We are resilient." Results reveal that Métis older adults have a strong and unique connection to their traditional lands (both within the community and the surrounding land) that supports their wholistic health and wellness, sense of social connection and connection to the past, and provides intergenerational mentorship and sharing of essential knowledge. Attachment to specific places and spaces on the land were clearly linked to perceptions of

wellness and aging well in place. However, challenges, including geographic distance and colonization, continue to impact negatively on their health by directly and indirectly limiting access to the land. The findings also reveal that Métis older adults have developed culturally adaptive responses and advocacy to continue to access spaces and places which support them to age well in place. This study adds to the few studies on aging well for Indigenous People, especially Métis living in rural communities in Canada. These findings increase our understanding of space and place-related dimensions of aging well that can inform culturally sensitive and relevant interventions, services, and resources to be applied/considered by decision makers and healthcare practitioners to prolong the length of time Métis older adults can remain in their community to age well in a way that reflects the realities of life in modern Indigenous communities in Canada. This project is meaningful and has implications for Métis, First Nations, and Inuit older adults who desire to age well and in place locally, provincially, and nationally, and is also relevant to Indigenous populations internationally.

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DEDICATION

To Mr. Anthony Asare-Boabang, Mrs. Elizabeth Asuamah, Linda, Kwadwo, Yaw, and Maame: You never doubted my ability to fly this high.

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LIST OF ABBREVIATIONS

BOL Breath of Life

CBPAR Community-based Participatory Action Research

CIHR Canadian Institutes for Health Research

DNR Department of Natural Resources

FSIN Federation of Sovereign Indigenous Nations

GIS Geographic Information Systems

HBC Hudson's Bay Company

LC Land Cover

LU Land Use

MA Master of Arts

MN – S Métis Nation of Saskatchewan

MOP Memorandum of Participation

PEI Personal-Environment Integrative

PPGIS Public Participatory Geographic Information System

SDE Standard Deviational Ellipse

SGIC Saskatchewan Geospatial Imagery Collaborative

TCPS 2 Tri-Council Policy Statement for Ethical Conduct for Research Involving Humans

TRC Truth and Reconciliation Commission

UN United Nations

WHO World Health Organisation

WMZ Wildlife Management Zone

CHAPTER ONE: INTRODUCTION

1.1 Introduction

In Canada, there are three distinct Aboriginal groups recognized by the Canadian Constitution Act of 1982 Section 35 (2), namely First Nations, Métis, and Inuit (Constitution Act, 1982). First Nations people are the original inhabitants of the land that became known as Canada. First Nations communities continue to exist as distinct Nations and communities across North America (Brizinski, 1993). The Inuit inhabit Canada's most northern regions (arctic regions) (Henri, Jean-Gagnon, & Gilchrist, 2018). The Métis have mixed Indigenous and European ancestry. Historically, Métis have been understood as distinct people, who uphold a unique "society with its own distinct cultural, economic, and social orientation" that distinguishes them from other Indigenous People[1] (Macdougall, 2017a, p. 5).

Indigenous People in Canada possess a special relationship with the land and understand how to live in health-sustaining relationships with their land (Ballard, Coughlin, & Martin, 2020). Similarly, Métis people depend on the land for food, shelter, and to support their cultural activities. In the Métis community of Île-à-la-Crosse, you can hardly have a conversation with community members on their health and wellness without talking about the land. A group of people for whom the land is recognized to be important is the older adult population because they are considered the holders of essential knowledge, which is grounded in the land (Ballard et al., 2020; Blackstock, 2007). There is no doubt that the land can have implications for their livelihoods as well as for the good health and wellness of the older adult population. Although the land is critical to health and wellness, there is a lack of research on perceptions of the influence of the land on aging well in rural Métis communities. The paucity of knowledge on rural Métis older adults has implications for intervention programs, services, and strategies designed to support rural aging well in place, which led to this current research. Exploring the perceptions of the land, health, and wellness among a demographic group such as rural Métis

[1] In this thesis, I clarify using the term 'people' instead of 'peoples', and recognize the debate that exists in the literature with respect to using these terms (Younging, 2018). The terminologies Aboriginal and Indigenous are further explored and their usage in this thesis described in section 1.4 of this chapter.

older adults is essential to facilitate the development of appropriate intervention programs and services aimed at ensuring health, wellness, and aging well in place.

1.2 Rationale

Global aging reports over the years have shown that the world's population is aging rapidly (United Nations Department of Economic and Social Affairs, 2019; World Health Organization, 2002). Many countries are experiencing growth in the proportion of their older adult population; in 2018, in some parts of the world, the number of people aged 65 and older has outstripped the number of children under 5 years (United Nations Department of Economic and Social Affairs, 2019). By the year 2050, one in every six people in the world will be aged 65 years or older, an increase from one in every 11 people observed in 2019 (United Nations Department of Economic and Social Affairs, 2019). In countries in North America and Europe, it is estimated that one in every four people will be aged 65 years or older by 2050 (United Nations, 2013; United Nations Department of Economic and Social Affairs, 2019). The trend toward aging has implications for quality of life, population and community planning, disease prevalence and health promotion interventions, migration patterns, economic growth, and existing support systems.

Canada is no exception; the proportion of the senior population (those aged 65 and over) has doubled over the past 40 years. Population projections show that by 2031, one in four people could be 65 years or older (Statistics Canada, 2017b). In 1971, seniors constituted 8% of the Canadian population (Statistics Canada, 2011). The total number of seniors has increased from 3 million in 2005 to 4.8 million in 2011 to 5.9 million in 2016, almost doubling in number in approximately 10–11 years. There is now a larger proportion of seniors (16.9%) aged 65 years and older than there are children (16.6%) aged 14 years and younger (Statistics Canada, 2017b). It is anticipated that by 2036 the aging population will continue to increase by more than 50% to about 10.4 million, representing 25% of the total Canadian population; by 2061, projections predict a greater divide between the number of seniors to children 14 years and younger (Statistics Canada, 2017b). Figure 1.1 depicts population distribution by age in Canada from 1950 to 2015. It is expected that Canada's aging population will have major implications for the quality of life and overall health of seniors (Jeffery et al., 2018). The demographic shift toward aging has implications for pension benefits, housing, healthcare, and transportation options for seniors to access services and places essential for a healthy life (Bacsu et al., 2012; Jeffery et al., 2018).

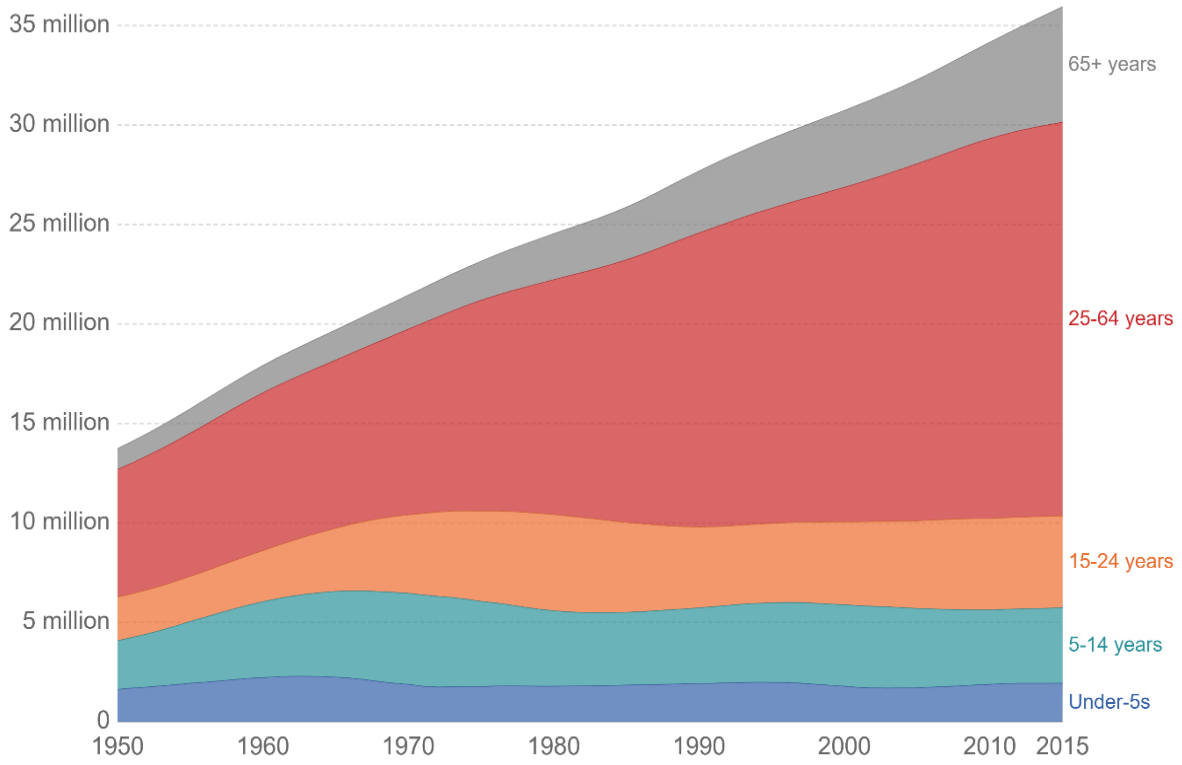

Figure 1.1. Population distribution in Canada by age groups from 1950 to 2015. Source: United Nations (2017).

Aging trends are also observed among the Indigenous populations in Canada, even though evidence from Statistics Canada indicates a growing number of young Indigenous populations. The median age of Aboriginal People in Canada is 32 years compared to 40 years in the general Canadian population (Statistics Canada, 2017a). However, we have also observed an increase in the number of Aboriginal older adults. For example, 4.8% and 7.3% of the Aboriginal population in Canada were aged 65 years or older in 2006 and 2016, respectively. This proportional increase represents the largest population increase of all Aboriginal age groups between the two census periods (2006–2016) (Statistics Canada, 2017a).

Moreover, on average, Aboriginal People experience more health challenges and report more chronic conditions earlier in life than their non-Aboriginal counterparts (Smylie & Adomako, 2009; Wilson, Rosenberg, & Abonyi, 2011; Wilson, Rosenberg, Abonyi, & Lovelace,

2010). In fact, the health status of Indigenous older adults age 55 years and older is more similar to the health of the general Canadian population aged 65 years and older (Wilson et al., 2011). In 2010, 7% of Aboriginal seniors aged 55–64 years reported three or more chronic conditions, compared with 2% of non-Aboriginal (Wilson et al., 2010). This suggests that inequities in health start earlier among Indigenous populations and track across the lifespan.

The inequities in health are attributed to the influence of the social determinants of health in the Indigenous communities. These social determinants of health include environments, systems, structures, and institutions that impact the maintenance of health and wellbeing across the life span (C. Reading & Wien, 2013). The determinants of health are classified as proximal (for example, health behaviours, food security, education, employment and income, and physical and social environment), intermediate (for example, healthcare systems, community infrastructure, resources, capacities, and economic development), and distal (for example, colonialism, racism and social exclusion, and self-determination) (Greenwood, de Leeuw, Lindsay, & Reading, 2015; C. Reading & Wien, 2013). Researchers have found that health determinants that uniquely impact Indigenous populations (such as distal determinants including racism, discrimination, and colonization) provide much insight into the factors driving inequitable and disparate health inequities among Indigenous populations (Greenwood et al., 2015; Greenwood, de Leeuw, Lindsay, & Reading, 2018; C. Reading & Wien, 2013).

A significantly larger proportion of Indigenous seniors have been found to have higher rates of chronic conditions, including obesity, heart disease, stroke, and cancer compared to the overall national average (Health Council of Canada, 2013; Wilson et al., 2010). Also, many Indigenous older adults have poorer mental and physical health when compared to their non-Indigenous counterparts (Jacklin & Walker, 2020). These disparities have been attributed to the impact of colonization (Beatty & Berdahl, 2003; Jacklin & Walker, 2020). The current health status of Indigenous seniors informed the Health Council of Canada's categorization of Indigenous seniors as among the most vulnerable citizens in Canada (Health Council of Canada, 2013).

In Canada, researchers and policymakers define "seniors" or "older adults" as being age 65 and older. However, in the case of the Indigenous population, researchers and policymakers categorize Indigenous "seniors" or "older adults" as adults age 55 years and older (Wilson et al.,

2011), because of the health disparities between Aboriginal and non-Aboriginal populations. In this thesis, the term Métis/Indigenous "older adults" refers to the population aged 55 and older.

Despite the rapid population aging and poorer health status of First Nations, Inuit, and Métis people, very little is known about the aging experiences, aspirations, and support needs of Indigenous seniors. Furthermore, compared with what is known about First Nations older adults, even less information is available about the health and wellness of the Métis aging population (J. G. Bartlett et al., 2012). Young (2003) reviewed health research among the Indigenous People in Canada and observed that there is a significant gap in the literature on Métis in Canada, pointing specifically to the need to conduct aging research in this population.

To respond to this need, I, together with my co-supervisor (Dr. Sarah Oosman), my advisory committee member (Dr. Sylvia Abonyi), and other researchers from the University of Saskatchewan in collaboration with the Métis community of Île-à-la-Crosse, SK, worked on the "*Wuskiwiy-tan*! Let's move! Aging well in a rural northern Saskatchewan Métis Community" project. This was a five-year research project funded by the Canadian Institutes of Health Research (CIHR). The project aimed at revealing concepts, experiences, and aspirations of aging well in a Métis context. By employing a community-engaged framework, the project aimed to privilege the voices of the people of Île-à-la-Crosse. This PhD project is embedded in and informs the *Wuskiwiy-tan*! Let's move! project.

1.3 Research Purpose and Questions

Motivated by the paucity of knowledge available related to the aging experiences, aspirations, and support needs of Métis older adults, this project worked in collaboration with a Métis community in rural northern Saskatchewan to narrow this research gap. The main purpose was to investigate Métis older adults' relationship with their land, exploring their perceptions of the influence of space and place on aging well in the community of Île-à-la-Crosse.

The following research questions guided this project:

1. How do Métis older adults perceive their land as part of their overall sense of place and wellbeing?
    - What land-based resources promote Métis older adults' sense of place?
    - How does being close to the lake, the bush, and the land in general influence aging well?

2. How has the land changed over time, and how do these changes impact their ability to age well?
    - How has the land changed over time?
    - How have the changes affected key species and habitats?
    - What other factors explain the changes occurring on the land?
    - How do older adults perceive these changes to impact aging well?
3. What strategies have Métis older adults used in order to age well in their current landscape, and how might these strategies differ from the past?
    - How have older adults adapted to their environment?
    - What activities do adults engage in, and how do older adults perceive these activities as influencing their overall sense of health and wellbeing?
    - Where do these activities take place, and are older adults consistent in where they chose to carry out these activities?

In this thesis I argue that Indigenous People have the right to access their land, which consists of distinct rights to maintain their culture and traditional lifestyle (United Nations General Assembly, 2007). Métis people have lived off the land for many years and depend on it for some of their basic needs, including food and shelter. This thesis argues that the land is critical to nurture wholistic[2] health and wellness — physical, cognitive, emotional, and spiritual health — of Métis older adults as well as their attachment to place. Being on or closer to the land, spending time on the land, and participating in land-based activities, including hunting, fishing, trapping, hauling of wood, and connecting with other generations, are essential for maintaining a balance among these domains of health. Interestingly, Western boundaries of the community, including areas that define Western-perceived places of land-based activities, are different and inclusive of a much smaller geographical land base than those that are accessed by Métis older adults. This thesis argues that granting older adults rights and access to ancestral

[2] In this thesis, there is a preference for "wholistic" (whole/all) over "holistic" (hole/gap) to describe the health of Indigenous People to include the mental, physical, emotional, social, cultural and spiritual wellbeing of both the individuals and the community (J. Reading, Kmetic, & Gideon, 2007). Even though "holistic" is far more common in academic writing, "wholistic" is increasingly being used by Indigenous scholars to emphasize the entirety of the health and wellbeing of Indigenous People.

places on their traditional lands is essential for supporting their health and wellness and can contribute to their ability to age well in place. Planning for healthcare in rural Métis communities has been hitherto focused on providing healthcare facilities underpinned by the distributive approach (J. G. Bartlett et al., 2012; Cooper et al., 2020). The health benefits of the land, consistent with Métis culture, have been ignored in both practice and research on rural Métis older adults' health and wellness. This thesis argues that health benefits derived from the land place an onus on healthcare practitioners and other stakeholders to develop land-based interventions to support aging well in place.

1.4 Indigenous People in Canada

The Canadian Constitution Act of 1982 recognizes three distinct Aboriginal groups: First Nations, Métis, and Inuit (Constitution Act, 1982). Each of these groups have many different communities within them with diverse cultures. There are many terminologies used throughout this thesis that include Aboriginal, Indigenous, First Nations, Inuit, and Métis. These terms have evolved and continue to evolve. Throughout history, different terminology has been used by non-Indigenous people to refer to the Indigenous People of Canada. The term *Indian* supposedly originated from Christopher Columbus' description of the original inhabitants of North America (Brizinski, 1993) Later, the term "Indians" was used as the legal identity of people who are registered under the Indian Act of 1876. Currently, the use of this term in Canada is declining because of its linkage to colonial practices and policies (Brizinski, 1993). However, there exist a few Indigenous organizations and communities, such as the Manitoba Indian Education Association and Osoyoos Indian Band in British Columbia, who continue to use the term (Marks, 2014). As part of the decolonization processes, Indigenous organizations such as the Federation of Sovereign Indigenous Nations (FSIN) have chosen to make the change from Federation of Saskatchewan Indian Nations.

The term *Aboriginal* is a Government of Canada term for First Nations, Inuit, and Métis as defined in the Constitution Act of 1982. The term Aboriginal is used by Statistics Canada and the Truth and Reconciliation Commission of Canada. While some scholars assume that Aboriginal means "from the beginning" or "first inhabitants" (Brizinski, 1993), others look at the root meaning of the prefix *ab*, which means "not" and argue that Aboriginal means "not original," depriving Indigenous People of reclaiming "who they are" (Indigenous Innovation, 2017; Whitehawk, 2008). Consequently, it is argued that the term Aboriginal is a colonized term

by the government, which deprives Indigenous People of their cultural and spiritual identity and forces them to adopt a new identity (Indigenous Innovation, 2017).

Originating from the Latin word *indigena*, which translates to mean "native to the land" (Indigenous Innovation, 2017), the term *Indigenous* is increasingly being used in global and national discourses to collectively refer to the original inhabitants of an area and their descendants. For example, the United Nations (UN), through the United Nations Declaration on the Rights of Indigenous People (United Nations General Assembly, 2007), has set a global standard for the use of the terminology.

In Canada, the term Indigenous is gradually gaining preference over Aboriginal to describe First Nations, Inuit, and Métis people as a means of restoring the cultural and spiritual identities of the original inhabitants of Canada (Joseph, 2019). It also supports land claims and inspires territory acknowledgements, a practice that links Indigenous People to their traditional lands and respects their claims over such lands (Indigenous Innovation, 2017). The federal government, Indigenous organizations, and academics are shifting toward using Indigenous as a way of respecting Indigenous self-determination, self-governance, and reconciliation (Indigenous Innovation 2017). For example, the federal government's change of the name of the ministry of Aboriginal Affairs and Northern Development to Crown-Indigenous Relations and Northern Affairs and Indigenous Services Canada is evidence of this movement. However, most Indigenous People in Canada prefer using the terms that identify their unique Indigenous cultures, such as Cree, Dene, and Métis.

As Canada continues the dialogue on how everyone can respond and contribute to reconciliation, I find that the term Indigenous is aligned with reconciliation and building respectful relationships with Indigenous People. Therefore, for most of this thesis, I use the term Indigenous instead of Aboriginal, and I use Cree, Dene, Métis, and Inuit to refer specifically to these individual populations. Moreover, I recognize that moving forward with reconciliation means challenging the past, including past language use. Therefore, it is acceptable and encouraged to use the currently accepted terms as a sign of respect. However, where the published literature uses the term Aboriginal, I use that term to follow the original author choice.

1.5 Thesis Structure

This thesis consists of seven chapters, including this introductory chapter as Chapter 1. In Chapter 2, I situate the study in the related literature around Indigenous People's health, aging

well, relationship with land and environment, space, place, and wellbeing. I introduce the breath of life (BOL) theory (Blackstock, 2007) and the person-environment interchange framework (Wahl, Iwarsson, & Oswald, 2012) to inform my research project and enhance understanding of the environment and aging well. In Chapter 3, I clarify my positionality and place as a researcher in this project. Chapter 4 outlines the methodology I chose, including the application of a community-based participatory action research (CBPAR) approach and Two-Eyed Seeing. Also, I clarify my data collection and analysis techniques in this chapter. Chapter 5 presents data from key informant interviews. Chapter 6 examines results from the geographic information system, spatial interviews, and observational data, which highlight the spatial attributes of Métis older adults' place attachment. Chapter 6 also presents land cover/land use change occurring within the community's boundary. Chapter 7 provides a synthesized discussion of the research findings, overall conclusions, limitations, knowledge translation processes, and future research directions.

CHAPTER TWO: THE LAND, HEALTH, WELLNESS, AND AGING WELL IN PLACE AMONG INDIGENOUS PEOPLE

The goal of this literature review is to provide evidence for the critical need to study space, place, and aging well among Indigenous People in Canada, especially the Métis population. In this chapter, an overview of Indigenous People and their health is provided. The health of the Métis and their historical relationship with traditional lands[3] are highlighted in the context of the health and wellness impacts of colonization. This chapter further explores the literature on the environment, space, and place to identify the various perspectives through which these constructs are defined. As well, the breath of life (BOL) theory (Blackstock, 2007) and the person-environment interchange framework (PEI) (Wahl & Oswald, 2010), which form the foundation of this thesis, are explored. Finally, support for ethical approaches to research with Indigenous People is provided.

2.1 Health of Indigenous People in Canada

Many studies on the health of Indigenous People in Canada have found that Indigenous culture protects the health and wellbeing of Indigenous People in many ways (J. G. Bartlett et al., 2012; Beatty, 2018; Cooper et al., 2020). The protective factors existing in Indigenous communities include a connection with their traditional land, traditional medicine, local foods, spirituality, and traditional activities (Beatty, 2018; Tobias, Richmond, & Luginaah, 2013; Willox et al., 2012). Traditionally, Indigenous community members lived close to each other and supported one another. In many Indigenous communities, support systems are based on the values of community, kinship, connections, wellness, and shared responsibility of care. Cooper et al. (2020) found that fostering good relationships and helping are cultural values that have long existed to promote the health and wellbeing of people in many Indigenous communities for many years.

Although these strengths exist, health disparities persist due to historical trauma and ongoing racism. In Canada, health disparities exist between Indigenous People and the overall

[3] The term traditional land is used throughout this thesis to refer to the traditionally occupied territories of Indigenous People. It also includes all features of the living environment, including waters, plants, animals, and airs (Berkes, 2012).

Canadian population. The general health status of Indigenous People is observed to be poor compared to the general Canadian population across the lifespan (Frohlich, Ross, & Richmond, 2006). The prevalence of chronic conditions including high blood pressure, obesity, diabetes, and respiratory diseases is higher among First Nations and Métis populations when compared to the general Canadian population (C. Reading & Wien, 2013; Waldram, Herring, & Young, 2006; Young, Reading, Elias, & O'Neil, 2000). Also, the prevalence rates of infectious diseases, such as tuberculosis, are higher for Indigenous People compared to the general Canadian population (Health Canada, 2003). Indigenous People have a high rate of hospitalization, which is more than three times than overall Canadian population and their life expectancy several years less than the overall Canadian population. They have a premature death rate that is about two times that of the general Canadian population (Waldram et al., 2006). These are key indicators that a health crisis exists among Indigenous People, an issue that requires the attention of researchers.

Waldram et al. (2006) showed that the current health situation is a substantial improvement over the past, the product of years of intensive effort to narrow the health disparities gap. Waldram et al. (2006) and Hackett (2002) describe how, a century ago, many Indigenous People in Canada died from tuberculosis. Hackett (2005) argues that, about two centuries ago, many Indigenous People died from smallpox. It is important to note that in both cases, the Indigenous populations were infected by the settlers. However, the prevalence and death rates among the European settlers were not as widespread as the Indigenous groups. For example, there are instances where entire Indigenous communities died from smallpox (Hackett, 2005).

Many of the contemporary health disparities existing among Indigenous People in Canada can be ascribed to several factors, including the social determinants of health (Greenwood et al., 2015). Several social factors are found to influence the health of Indigenous People, including employment, income, formal education, environment, and degree of autonomy, among others. These factors have a significant impact on Indigenous People compared to their non-Indigenous counterparts influencing the health and wellbeing of people in Indigenous communities, including older adults (Greenwood et al., 2015; Varcoe, Bottorff, & Carey, 2010). Colonization and racism, in particular, have played and continue to substantively impact the health and wellbeing of Indigenous People (Adelson, 2000; Greenwood et al., 2015; Waldram et al., 2006).

Despite a growing literature examining the health of Indigenous People in Canada, little is known about Métis health. Most of the studies conducted on Indigenous People's health have focused on First Nations and Inuit, with limited studies focusing on Métis (Furgal, Garvin, & Jardine, 2012; Kumar, Wesche, & McGuire, 2012; Young, 2003). Since this thesis project focuses specifically on the health of the Métis older adults in Île-à-la-Crosse, it is essential to highlight findings from some of the few studies focusing on Métis.

Research has revealed that Métis people have a significantly higher incidence of chronic diseases such as obesity, diabetes, cancer, and acute myocardial infarction compared to the general Canadian population (Bruce, 2000a, 2000b; Martens et al., 2011). A systematic review and meta-analysis of obesity studies on Indigenous People in Canada found obesity prevalence to be highest among the Métis (42%), followed First Nations (41%), and lowest among Inuit (32%) (Kolahdooz, Sadeghirad, Corriveau, & Sharma, 2017). Foulds, Mamdough, Shubair, and Warburton (2013) contend that Métis experience significant burdens of obesity and its associated comorbidities, such as diabetes, at a rate that is double the rate of the general Canadian population. Also, Gionet and Roshanafshar (2013) used data from the 2007–2010 cycles of the Canadian Community Health Survey (CCHS) to estimate the prevalence of self-reported obesity among self-identified Métis living in Canada to be between 24.9–26.4%, with increases across the lifespan.

Martens et al. (2011) studied mental health among self-identified Métis in Manitoba and concluded that Métis people have a cumulative mental illness, schizophrenia, and depression prevalence similar to the general population, because they lacked meaningful health services (J. G. Bartlett et al., 2011; Martens et al., 2011). A 2016 report on the profile of mental health among Métis youth illustrates alarming disparities between Métis youth and their counterparts in the general population in British Columbia. (Tourand, Smith, Poon, Stewart, & McCreary Centre Society, 2016). In addition, available evidence indicates that Métis older adults are connected with the younger generations (Cooper et al., 2020). This close relationship suggests that the wellbeing of both groups is closely connected. Therefore, the health status of the youth is likely to impact the health and wellbeing of the older adults in these communities, and vice versa.

Little research on aging among Métis people has taken place in Manitoba. In a report documenting Métis aging in place, J. G. Bartlett et al. (2012) found that Manitoba Métis older adults preferred to stay in their home community to grow older. A significant finding from this

study was the acknowledgement that Métis culture is alive and practised in many rural Métis communities and that it is sustained by, and provides strong support for, Métis older adults aging in their home community. For instance, family members were found to play a crucial part in helping to ensure the health and wellbeing of aging older adults. Similarly, Cooper et al. (2020) point to adherence to Métis culture in many Métis rural communities in Manitoba for providing culturally responsive care to Métis older adults aging in their home community. However, the study also found challenges that older adults face in living in the home community, including lack of roads to other communities to access emergency or itinerant health services, lack of appropriate home care services, high cost associated with upgrading a home to increase safety or mobility, lack locally available and affordable food and gas supplies, among others (J. G. Bartlett et al., 2012).

Although fewer studies have been conducted on Métis, much less is known about aging among Métis people (J. G. Bartlett et al., 2012). Often, when we think about the health of Indigenous People in Canada, it is framed in terms of illness rather than through a strength-based discourse.[4] There is a push among researchers to reframe the health and wellness studies carried out among Indigenous People to be strength-based. Therefore, this project is not necessarily about the deficit in aging, but to document the influence of space and place on aging experiences, aspirations, and support needs of Métis older adults to age well in place.

2.2 Aging Well and Aging in Place Among Indigenous Populations

As indicated earlier, the population in Canada is aging and Indigenous People are aging faster than the overall Canadian population (Statistics Canada, 2017a). Also, Indigenous People report more chronic conditions earlier in life and are more likely to have lower health status across the life span (Wilson et al., 2011). Therefore, aging well is a priority among Indigenous communities. The terms *aging well*, *active aging*, *healthy aging*, and *successful aging* have all been applied to aspirations for a good aging experience and are roughly equivalent. In this thesis, I use aging well instead of the other terms to ensure consistency. However, where references use other terms, I will follow with that.

[4] The strength-based discourse on the health of Indigenous People focuses on culture, assets, and resilience as well as the larger socioeconomic relations that Indigenous People are embedded within. This is in direct contrast to the deficit discourse that characterizes Indigenous People's health in terms of dysfunction, illness, and failure.

Health Canada defines aging well as "a lifelong process of optimizing opportunities for improving and preserving the health and physical [functioning], social and mental wellness, independence, quality of life and enhancing successful life course transitions" (Health Canada, 2002). Aging well is more than just living a disease-free life as one ages. It includes achieving and keeping good physical, mental, and emotional wellbeing while leading an active social life (participation of older people in the communities where they age) (Skinner, Joseph, Hanlon, Halseth, & Ryser, 2014). In much of the work involving non-Indigenous older adults, the conditions to support this goal include awareness and access to information about support services and ready access to them, empowerment, support services, participation in community life, financial security, and adequate and affordable housing (Bacsu et al., 2012; Bacsu et al., 2014; Skinner et al., 2014).

The National Indian and Inuit Community Health Representatives Organization reported that aging well includes wellbeing in physical, mental-emotional, social, and spiritual domains (Ship & Tarbell, 1997). A study with Inuit revealed that aging well is defined by the ability to manage declining health with the most important determinants of health identified as ideological rather than material (Collings, 2001). This can be interpreted to mean that people's attitudes later in life, especially their willingness and ability to transfer their Traditional Knowledge and wisdom, is an indicator of successful aging. A 2006 report based on a series of national and regional gatherings of Métis seniors, Elders, and healers supports this view. The report identified the significance of history, culture, and language for understanding successful aging needs among Métis older adults (Edge & MacCallum, 2006).

Among the Métis people, aging well also includes access to the land: the place where their history, culture, and language reside (Cooper et al., 2020; Macdougall, 2017a). In fact, among the Métis, the identity of people is based on their relationship with land and place (Wilson & Peters, 2005). This points to the critical role of the land in the health and wellbeing of Métis people. There is, however, a paucity of literature linking aging well to the land.

The term *aging in place* has been used in the aging literature to refer to the ability of an individual to remain in one's home and community or where older adults choose to live as they grow older (Schofield, Davey, Keeling, & Parsons, 2006; Skinner et al., 2014). Older adults' ability to age in place is reflected in improved personal and clinical outcomes, and decreases long-term healthcare costs associated with caring for older people (J. G. Bartlett et al., 2012).

Effective practices for aging in place among Indigenous People focus on home and community environments (J. G. Bartlett et al., 2012; Cooper et al., 2020). The Government of Canada presently has an "aging in place" strategy, including alternative housing options, securing the community's environment for residents to stay active and engaged, and home care support services for older adults. For Indigenous People, this also means plans to maintain connections with their land during their old age (Health Council of Canada, 2013). It is important to note that Saskatchewan has one of the highest percentages and also increasing number of older adults in Canada. However, it is one of the few provinces without an aging strategy, thus impacting the health and wellbeing of older adults (Jeffery et al., 2013). Also, the extent that the spaces and places on the land influence the ability of Métis older adults, especially those in rural areas, to age well in place is unknown.

Several factors are identified as relevant for Indigenous older adults to age in place, including enhancing access to traditional land, availability of social networks and kinship support, ongoing participation of community life, and an opportunity for sharing knowledge and wisdom (J. G. Bartlett et al., 2012; Beatty, 2018; Collings, 2001; Cooper et al., 2020). Accessibility to traditional land is emphasized as critical to aging in place for older adults in Indigenous communities. J. G. Bartlett et al. (2012) show that aging in place relies on accessible Indigenous communities — communities that are without barriers and provide assistive support for people. This requires incorporating policies aimed at promoting the environments (places) accessible to older adults of all abilities. Collings (2001) observes that accessibility also includes making spaces and places available and reachable to everyone. Poor health among Inuit older adults tends to be higher when they have reduced access to resources in their communities, including healthcare and support services needed (Collings, 2001).

Active participation and engagement of Indigenous older adults in social and cultural activities in their communities encourage aging in place (Cooper et al., 2020). Skinner and Neil (2015), for example, note that a way of encouraging individuals to age in place is through participation in voluntary activities, including initiatives to improve their environment. Linking aging with active participation in social, cultural, and economic activities is seen as a promising avenue to ensure that seniors are not excluded or isolated in their communities (Han, Brown, & Richardson, 2018). The World Health Organization (2002) notes that exclusion and isolation

produce depression and other adverse health conditions among seniors (see also, Wahl et al., 2012).

The active participation of Indigenous older adults presents the opportunity for them to exercise their agency and maintain autonomy and independence, which are identified as important variables for aging well (Varcoe et al., 2010). Agency is defined as the capability, self-assertion, and capacity of individuals to reason and exert power through thought, language, and actions (Hand, Rudman, Huot, Pack, & Gilliland, 2018). There is an increased number of studies that acknowledge the agency of Indigenous older adults (Ballard et al., 2020; Brooks-Cleator & Lewis, 2019; Freeman, Martin, Nash, Hausknecht, & Skinner, 2019). These studies demonstrate that older adults make contributions to and influence their neighbourhoods. A study that examined older adults' agency showed that First Nations older adults frequently initiate interactions with other members in their communities, contributing to networks that support cohesion, health, and wellbeing in the communities (Freeman et al., 2019). However, none of the literature has explored these concepts from a Métis perspective.

2.3 Indigenous People's Wellness and Relationship with the Land in the Context of Canadian History

Indigenous People in Canada have lived off the land for many centuries and have maintained a sacred relationship with their traditional lands for their wellbeing (Tobias et al., 2013; Willox, Harper, Edge, et al., 2013). Indigenous People depended solely on the resources of these lands for survival, including food, shelter, spiritual enrichment, cognitive development, reflection, and aesthetic experience (Lines, Yellowknives Dene First Nation Wellness Division, & Jardine, 2019). Ballard et al. (2020) observed that the strong relationship between Indigenous People and their traditional lands underpins Indigenous ways of knowing. This knowledge has been transmitted over generations through Oral Tradition and experiential teachings (Blackstock, 2007; Tobias & Richmond, 2014). For example, through hunting and trapping, older adults can share their knowledge on how to successfully live off the land with their children and grandchildren while also being active (Tobias et al., 2013). This also includes teachings on sustainable practices aimed at holding the land in trust for future generations, such as the value of making use of everything from a kill and taking only what is needed from the land (Parlee, Berkes, & Gwich'in, 2005; Tobias et al., 2013).

Indigenous People's health and wellbeing are integrally connected to their traditional lands. The close interconnectedness of all the things on the land has resulted in deep-rooted respect for the land. In the worldview of Indigenous People, the land has many parts, such as water, trees, animals, and human, which are closely connected (Adelson, 2000; Ballard et al., 2020; Tobias & Richmond, 2014). These parts combine to sustain their physical, social, emotional, and spiritual health and wellbeing. This is described as wholistic, emphasizing the broader physical and social environments surrounding an individual exists (Greenwood et al., 2015). As Willox, Harper, Edge, et al. (2013) note, the capacity of an individual to be out on the land is vital for maintaining balance among the physical, social, emotional, and spiritual domains of health and wellbeing. Wilson (2003) uses the concept of therapeutic landscapes[5] to explore how First Nations people's connection to their land supports them to maintain their physical, social, emotional, and spiritual health and wellbeing.

The health and wellness of Indigenous People is a reflection of the health of their land (Ballard et al., 2020; Cardinal & Hildebrandt, 2000; Read et al., 2010). Cardinal and Hildebrandt (2000) found that Cree in Saskatchewan describe themselves as *Iyiniwak,* which means "the people made healthy by the land." Further, Adelson (2000) maintains that the Cree measure their health and wellbeing through healthy land. For them, a healthy land not only supports land-based practices but also gives them identity by ensuring cultural continuity through intergenerational knowledge transfer. It is the promotion of this knowledge system that connects people and their traditional land. Therefore, there is an obligation on Indigenous People to respect and look after the land for the land to look after them (Richmond, 2015). This reciprocal relationship is vital to their health and wellbeing.

Although the land supports the health and wellness of Indigenous People, many years of ongoing colonialization[6] have had an impact on the lives of Indigenous People, including their relationships with their traditional lands (Coulthard, 2010). Colonization led to the loss of Indigenous places and spaces through forced removal from their traditional lands, forced

[5] Therapeutic landscapes "are seen as locations associated with the treatment and healing …[it can be] physical or built environment" (English, Wilson, & Keller-Olaman, 2008, p. 69). Therapeutic landscapes in the literature have been concerned with improved health and restoration.

[6] The process through which a dominant power assumes control of someone else's territory and applies one's own systems of governance, laws, and religion (Logan, 2015).

assimilation, and acculturation. Richmond (2015) argues that the dispossession of traditional lands occurred in both direct and indirect forms to erode the health-sustaining relationships between Indigenous People and their traditional lands. For example, the establishment of the reserve system and signing of treaties, in many instances, dispossessed and alienated many Indigenous People from their productive lands, which supported traditional practices, and forced them on to lands which barely supported those practices (Burkhart, 2019; Tobias & Richmond, 2014). Other assimilation policies, notably the imposition of the residential school system, stripped Indigenous People of their Traditional Knowledge, culture, ceremonies, language, and healing systems, most of which are passed on through experiential learning on the land (J. G. Bartlett, 2003). This has negatively impacted health and wellness.

Similar to other Indigenous People, the Métis have a long history of living off the land (Ens & Sawchuk, 2016). Métis art tells about the connection between the Métis people and their land. They see themselves as belonging to the land and as one of the integrated elements with every aspect of their lives linked to it (Edge & MacCallum, 2006; Macdougall, 2017b). The land has historically sustained every aspect of Métis lives, including their physical, spiritual, emotional, and mental health. For example, they depended directly on the land for food (berries, gardens, fishing, and trapping), which impacted their health and wellbeing (Edge & MacCallum, 2006; Macdougall, 2017b; Supernant, 2018). The land is a vital asset because it serves as an abode for the ancestral spirits. The Métis National Council believes that the survival of the Métis and their traditions is linked inextricably to their land (National Aboriginal Health Organization (NOHA), 2008). The special relationship between Métis and their land plays a significant role in creating and shaping the meaning and attachment to their land, which may more directly impact on their livelihoods, health, and wellbeing.

Historically, the Métis had a wide-ranging land base in the provinces and territories across Canada, including Alberta, Ontario, British Columbia, Manitoba, Saskatchewan, and the Northwest Territories following confederation (Macdougall, 2017a). As a result of colonization, today, many Métis people predominantly live in areas located outside their homeland (Ens & Sawchuk, 2016; Macdougall, 2017a). Métis were forced from their traditional lands by military force by the Canadian state (Andersen, 2011). The government did not recognize that the Métis had Indigenous title to the land. For instance, even though the negotiation involving the purchase of what was known as Rupert's Land by the Hudson's Bay Company (HBC) affected Métis

traditional lands, they were not consulted when Britain negotiated with the HBC (Supernant, 2018). Later, the HBC transferred the territory to the Government of Canada.

In both the Manitoba Act of 1870 and the Dominion Lands Act of 1872, the Métis scrip[7] system was established to extinguish Métis' land title (Supernant, 2018; Tough & McGregor, 2011) in preparation for European settlement. The scrip was distributed to Métis in Manitoba, Saskatchewan, and Alberta (Supernant, 2018). Post scrip, many Métis were left without a land base, no political powers or rights to resources, all of which contributed to the collapse of the Métis economic base and their means of subsistence (Andersen, 2014; Supernant, 2018). Métis were forced to become squatters on Crown lands and became known as the Road Allowance People from 1900 to 1960 (Brizinski, 1993).

The dispossession of traditional land resulted in radical changes in the way of life of Métis people, including loss of traditional lifestyle, knowledge, ceremonies, and language (Tough & McGregor, 2011). These impacted negatively on the health and wellness of Métis people.

These historical relationships with the land combined with chronic underfunding of health have created an uneven burden of poor health outcomes for the Métis population. Many of the current health issues disproportionately affecting Métis people, such as diabetes, obesity, tuberculosis, cardiovascular diseases, and suicide, can be attributed directly to the legacy of colonial measures (J. G. Bartlett, Sanguins, Carter, Hoeppner, & Mehta, 2010). Other impacts on health and wellness include reduced social interaction occurring on the land, thereby limiting their ability to interact and share their knowledge (Andersen, 2014; Macdougall, 2017a; Tough & McGregor, 2011). This has also reduced the capacity of older adults in many Métis communities to share their knowledge and traditional skills, which are considered as a determinant of health among Indigenous People (Beatty, 2018; Greenwood et al., 2015; C.

[7] Scrip is a terminology used to describe a piece of paper used to describe someone's right to something. The Canadian government issued Métis scrip, officially known as "Half-breed scrip," to the Métis as a way of extinguishing their Indian title. Individual Métis were either issued "land scrip" or "money scrip." Land scrip was given in two separate certificates in the amounts of 160 acres and 80 acres (totalling 240 acres) and could be exchanged for portions of Dominion Lands (Homestead Lands). Money scrip could be used to purchase Homestead Lands (Tough & McGregor, 2011).

Reading & Wien, 2013). It is believed that this, in turn, has resulted in lower health outcomes for older adults.

The importance of the land to the health, history, culture, and tradition of the Métis has informed their struggle over the years to restore their land base. Ens and Sawchuk (2016) describe the Métis land claims across Canada as one of the most active political struggles being undertaken by an Indigenous group today. Since the 1970s, Métis in Manitoba, Saskatchewan, and the Northwest Territories have been negotiating with the federal government for the settlement of their land claims (Macdougall, 2017a; Sakitawak Development Corporation, 2018). The Métis Nation – Saskatchewan (MN – S) focused its land claim request for much of northwestern Saskatchewan — mostly the Métis communities of Beauval, Île-à-la-Crosse, Pine House Lake, and Buffalo Narrows (Sakitawak Development Corporation, 2018). These land claims could ultimately lead to Île-à-la-Crosse repossessing a greater proportion of their historical lands.

In June 2019, after years of legal battles and negotiations, the federal government signed self-government agreements with Métis Nations of Alberta, Saskatchewan, and Ontario. The agreement could give Métis rights to occupy their traditional lands, hunt, fish, and control social services in their communities (Canadian Broadcasting Corporation, 2019), all of which are critical to their health and wellbeing. However, the full implications of this agreement are yet to be seen in the Métis communities in these provinces.

The literature indicates the importance of the land is not limited to the historical narrative of Métis people's health but also confirms that the land continues to shape the health and wellbeing of Métis people across the life course. While the land plays a role in aging well, factors in the natural environment are particularly influential (Finlay, Franke, McKay, & Sims-Gould, 2015). As such, there is an urgent need for a more detailed exploration of the ways the land influence the health and wellbeing of older adults in the contemporary Métis context with more attention paid to the influence of place and space on aging well.

2.4 Environment, Space, Place, and Wellbeing

The concepts of environment, space, and place have been used in health geography for many years to examine humans and their environment and how it impacts their health. This stems from the belief that the environment, spaces, and places impact health and healthcare. This section of the thesis examines the concepts of environment, space, and place and their impact on health and

wellbeing. The term *environment* is used in the literature to refer to the total surrounding conditions of an organism (Smit & Wandel, 2006). The environment plays an important role critical to the health and wellbeing of people. For example, health behaviours and choices such as physical activity, food, shelter, spiritual, and wellbeing of people depend on natural and built environments. The environment, therefore, serves as a determinant of health, which can have wide-ranging consequences on health behaviours (Greenwood et al., 2015, 2018).

Human geographers have employed the concepts of space and place as a means of understanding people's relationship with their local surroundings and the broader situation. Yi-Fu Tuan, for example, is famous for his publications on both concepts. He claims that space and place are similar words denoting a common experience (Tuan, 1990). According to Tuan (1977), there are no emotions, meanings, and social connections attached to spaces, making space an abstract concept. Similarly, the Dictionary of Human Geography defines space as "a blank canvas upon which human activities are played out, and [often denoted by the global grid system]" (Gregory, Johnston, Pratt, Watts, & Whatmore, 2009, p. 697).

The concept of place is defined as any locality, or space, made meaningful through human experiences or attachments (Tuan, 1977). He continues to argue that human beings pause at a locality because it satisfies specific needs. "Places" are created as humans respond to, interpret, and manipulate their environment (Agyekum & Newbold, 2016). Massey (1994) offers probably the most comprehensive analysis of how "place" is constructed by stating that the "singularity of a particular place is formed in part out of the specificity of the interactions which occur at that location…" (p.168). These conceptualizations mean that place identities are constructed through human interactions.

Often places are differentiated by the cultural and subjective meanings through which the place is constructed and understood (T. Creswell, 2015). This is referred to as sense of place or place attachment, which suggests "intimate, personal and emotional relationships between self and place" (Gregory et al., 2009, p. 676). This leads to bonding with places (Tuan, 1990). Tuan (1974) uses the term *topophilia* to describe the memories, meanings, and attachments that people develop with places, which best captures emotional attachment to a place (Agnew, 2002). Williams and Kitchen (2012) point out that people ascribe different values and meanings to place, including peace, relaxation, aesthetic, economic, and spiritual, which are important to the

health and wellbeing of people. The perceptions and meanings of place, therefore, differ from one group to another and from person to person.

Indigenous sense of place encompasses the complexity of meanings attached to places. Rapaport (1975) clarifies that places are central to the meaning and purpose Indigenous People give to their land. Cajete (2000) describes a sense of place in Native American cultures as where people understand that "all entities of nature … rivers, plants, mountains, animals, lakes, stones, trees, among others, are embodied in relationships that must be honoured" (p.178). Indigenous construction of place attachment, to a great extent, is maintained and reinforced by intergenerational transfer of knowledge and is demonstrated through custodial responsibilities on the older generation (Blackstock, 2007). For Indigenous communities, participation in activities such as land-based activities occurs over many generations and the knowledge is acquired over centuries. Therefore, there is a need to consider activity space.[8]

Given Indigenous viewpoints toward the land, one could argue that for Indigenous People, the land is the meeting point for meaning, health, and wellbeing (Watson, 2009). Thus, from the perspective of Indigenous People, the natural environment is seen as an essential aspect of their place attachment. Interestingly, space and place are critical Western constructs that have not been expanded from Métis experiences or lenses to understand Métis older adults' relationship with their land, aging experiences, aspirations, and support needs. Therefore, this PhD project aims at filling this knowledge gap by investigating Métis older adults' relationship with their land, exploring their perceptions of the influence of space and place in aging well.

2.5 Conceptual Frameworks

Successful use of the environment, as argued by Chaudhury et al. (2016), is dependent on environmental resources. It is believed that aging well is dependent on interactions between Indigenous older adults and their environment and that the nature of interactions accounts for the varying health status of older adults. However, there is no one unifying conceptual framework for studying the influence of space and place on aging well among Métis older adults. The lack

[8] Activity space is "the overall geographical area in which individuals spend time in their day-to-day lives" (Holliday, Howard, Emch, Rodríguez, & Evenson, 2017, p. 181). The concept deals with the usage of space and depicts the travel range and locations people choose to travel. The extent and structure of activity space depend on environmental resources and socioeconomic characteristics of people (Sharmeen & Houston, 2019).

of a unifying framework partly informed this project. The frameworks for the thesis are made up of conceptual elements, which have been established by empirical research based on the review of the existing literature. Subsequently, the thesis used the BOL theory (Blackstock, 2007) and the PEI framework of aging well (Wahl et al., 2012).

2.5.1 Breath of life theory. BOL is a bi-cultural theory that has its foundation in First Nations ontology and the physics theory of everything (Blackstock, 2007, 2011). The theory was developed in response to structural risks, such as inequalities, poverty, and poor housing, related to First Nations child welfare (Blackstock, 2007, 2009). BOL is underlined by the belief in the circular creation of life. For instance, in Indigenous culture, individuals live their lives based on knowing ancestral teachings. These individuals contribute to those teachings during their lifetime by passing those teachings on and then become an ancestor (Blackstock, 2007). The circular creation of life is based on the view that people are the trustees of knowledge, and the values and spirits embedded within, on what it is to be human and belong to a group so that it can be passed on to a different generation (Blackstock, 2007).

It is assumed that the past generation passed on this essential knowledge to the present generation. The role of the present generations is to ensure that future generations are taught to understand the teachings of this essential knowledge. This relational approach is based on the view that knowledge only reaches maturity at the end of life when it is time to fulfill two of the most important functions of a lifetime: the passing of knowledge to children and mentoring the middle-aged as they transition to the next generation of Elders (Blackstock, 2007).

One of the fundamental principles essential to the functioning of BOL is the importance of people's "relationships to the world and others" (Blackstock, 2011, p. 6). This is viewed in terms of relationships with other community members and their natural environment. Blackstock argues that humans, by nature, are interactive creatures who form a part of the "interconnected web of life" that comprises other individuals and the natural environment (Blackstock, 2011).

It is the interactions and relationships with spaces that shape places in the natural environment, out of which local knowledge, aspirations, and values for Indigenous communities are formed and transferred over generations (Wexler, 2011). It is these relationships that facilitate the transfer of knowledge from the older generation to the younger generation (Blackstock, 2007, 2011). As Dovey (2010) points out, "place is an inextricably intertwined knot

of spatiality and sociality" (p.6). Therefore, all the things that affect the individual also influence their relationships with other people and their natural environment (Blackstock, 2007).

Another principle of BOL is founded on the Aboriginal perspective of the expansive concept of time, where the past, present, and future mutually influence the actions of people (Blackstock, 2011). BOL theory is rooted in the concept of *seven generations* (Assembly of First Nations, 2006; Blackstock, 2007, 2011), where individuals consider their actions in terms of the influence of the seven generations. This makes an intergenerational perspective critical to understanding aging well among Indigenous People. Indigenous children, youth, and adults are part of the network of relationships that shape their health and wellbeing (Blackstock, 2007; Cornect-Benoit, Pitawanakwat, Walker, Manitowabi, & Jacklin, 2020). Data indicate that Indigenous seniors are more likely than non-Indigenous seniors to be the primary caregivers for their grandchildren (Wilson et al., 2010) and are influential role models to the younger generation (Varcoe et al., 2010), making it easier for Indigenous older adults to transmit their knowledge. Indigenous People regard the attitude of people as they age, such as their willingness to transmit the traditional accumulated knowledge to the younger generation, as an indicator of successful aging (Collings, 2001; Ship & Tarbell, 1997). The close relationship between grandparents and grandchildren suggests that the health and wellbeing of both groups are intimately connected and that these intergenerational relationships should be appropriately considered for supporting aging well.

In addition to the intergenerational perspective, a life course perspective also underpins the BOL. Abonyi and Favel (2012) suggest that understanding the determinants of aging well experiences requires placing the current experiences of seniors in the context of the life history of individuals, populations, and communities. This view is further supported in life course epidemiology, which concludes that current health reflects a lifetime of past exposures (Kuh, 2019). J. Reading (2009) contends that the life course approach is especially crucial in understanding the health of Indigenous People pointing to earlier work that frames residential school attendance as a direct and indirect determinant of health (J. Reading & Ellias, 1999).

Dr. Cindy Blackstock frames the importance of time, the value of ancestral knowledge, values, and beliefs through her Aboriginal ecological framework (Blackstock, 2007). Figure 2.1 illustrates Blackstock's Aboriginal ecological framework that she based on BOL theory. The framework places humans as inseparable from the Mother Earth, the "universe and from human

existence across time" (Blackstock, 2019, p. 857). As trustees of knowledge, it is the responsibility of the individual to understand and pass on the knowledge to the younger generations. In doing this, people pay attention to the details of the knowledge, values, and spirits embedded in it so that it can be passed on (Bennett & Blackstock, 2006; Blackstock, 2007). This is required to ensure that knowledge is "understood within the four dimensions of learning: spiritual, emotional, physical and cognitive and that each teaching is situated within an interconnected knowledge web" (Blackstock, 2007, p. 3). Wellbeing results from a balance of intersecting spiritual, emotional, physical, and cognitive dimensions of health. Culture and context shape the manifestations of these dimensions in human experience and are informed by the frequent evolution of Indigenous ancestral knowledge and the passing of that knowledge (Blackstock, 2007, 2019). Attaining a balance in these dimensions is not static but oscillate continually (Blackstock, 2019). Indigenous People view aging well to include physical, mental, emotional, social, spiritual, and traditional domains of wellbeing (Collings, 2001).

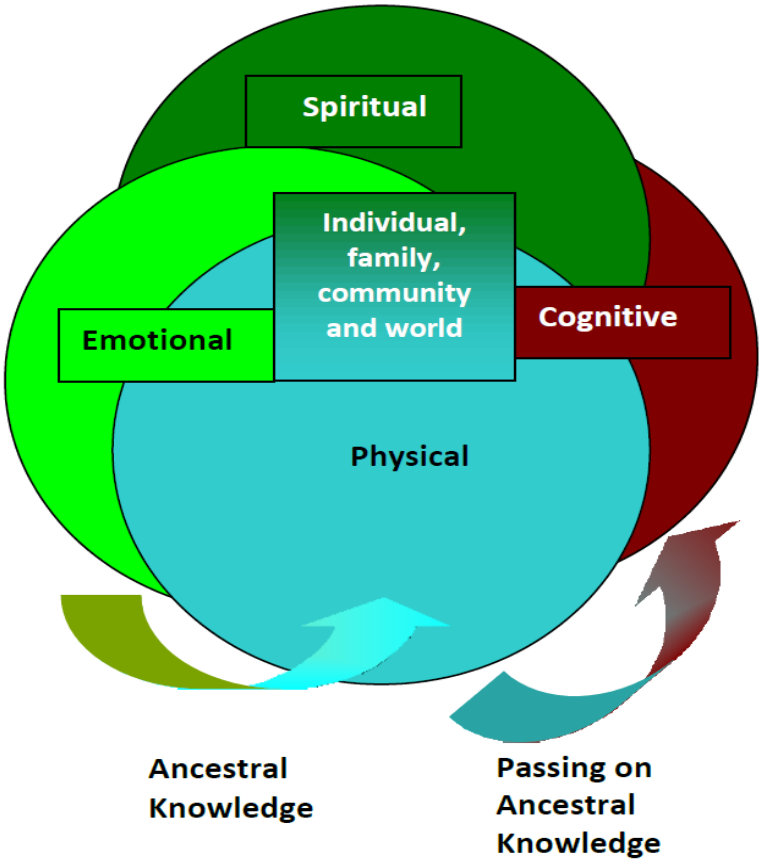

Figure 2.1. Ecological approach centred on Aboriginal epistemology. Source: Reprinted from Blackstock (2007, p. 4) (see Appendix G for permission from the copyright holder).

In Indigenous cultures, it is the Elders and older adults who hold positions of transferring ancestral knowledge to the younger generations (Gabel, Pace, & Ryan, 2016). This ancestral knowledge shapes the context of reality, providing an avenue of achieving a balance and wellbeing to a community (Blackstock, 2007, 2011). Blackstock (2007) argues that the relationships in Indigenous communities are properly viewed as extending forward and backwards through time to influence the health and wellbeing of Indigenous People. This is essential to understanding the health and wellbeing of communities.

This PhD thesis uses the BOL theory and the Aboriginal ecological framework to understand the importance of intergenerational interactions and rural Métis older adults transmitting their knowledge in support of aging well and wellbeing. Specifically, the theory and framework provide a structure for data collection and thematic analysis that are consistent with the framework — including the four dimensions of wellbeing it identifies and placing more

explicit emphasis on the role older adults play in promoting interactions and passing on ancestral knowledge. Thus, the BOL theory and the Aboriginal ecological framework provide key insights into Métis older adults' relationships and the transfer of knowledge in their community.

2.5.2 Person-environment interchange (PEI) framework of aging well. The PEI framework of aging well (Wahl et al., 2012) also informs this thesis. This "Western" (or Eurocentric-informed) framework draws on the ecological theory of aging (Lawton & Nahemow, 1973) and was introduced by Han-Werner Wahl and Frank Oswald to recognize the complex PEI that contributes to aging well. It acknowledges the vital role of the physical-social environment[9] in the lives of older adults (Wahl & Oswald, 2010), but does so through a Eurocentric lens. The framework was developed with the view that aging occurs in a context where various environmental factors are "expected to shape survival time" (Wahl & Oswald, 2010, p. 111). It emphasizes contexts by acknowledging the significance of the environment on the health and wellbeing of older adults. The main focus here is on the interrelations between older adults and their physical surroundings and how these interactions support them to age well in place (Cassarino & Setti, 2015; Wahl et al., 2012; Wahl & Oswald, 2010). Specifically, Wahl and Oswald (2010) used their framework to study the contributions of home, public, and community environments to aging well, and provide a potential basis for understanding the environmental influence on aging well.

This framework is informed by the transactional perspective of the environment, drawing on the view of space and place as a complex dynamic web of environmental elements that are inseparable from the health and wellbeing of older adults (T. Creswell, 2015; Hand et al., 2018). These elements continually interact with and shape the health and wellbeing of people over time (Goodchild, 2015; Hand et al., 2018). Individuals and places interact through complex multi-layered interactions and continually shape each other (T. Creswell, 2015). The place and spatial characteristics within the environment support and shape lifestyle, participation, and wellbeing (T. Creswell, 2015). At the same time, person and place can interact to impact negatively on

[9] "Physical–social environment" as used in the framework to mean that there is no "objective environment." The framework proposes that the physical environment is imbued with "social interpretations, cultural meanings, ongoing historical influences" (Wahl & Oswald, 2010, p. 112).

older adults, including marginalization and social exclusion related to the loss of place and spaces (Hand et al., 2018).

The framework has environmental resources as the main element, as depicted in Figure 2.2. Other elements include experience, sense of belonging, behaviour, agency, identity, wellbeing, and autonomy. The emphasis is on the relationships between and among all the elements. Wahl et al. (2012) note that the interrelationships among these elements may lead to aging well. However, it is essential to state that different places in the environment elicit different meanings. The authors point out that different locations have different meanings and may impact on the health and wellbeing of older adults differently. Thus, the value and impact of the environment on aging well may vary from one location to another.

The PEI framework is used in this thesis to understand rural Métis older adults' perspectives of the land and aging well. Specifically, the framework provides a structure for visualizing the importance of the land and understanding how it influences the health and wellbeing of older adults. This framework also provides critical insight into how Métis older adults think about their land and different aspects of their health. This conceptual framework was used to inform the data collection guides and provide structure for the thematic analysis. Similar to Hand et al. (2018), close attention was paid to the usage of the key elements in the framework during the interviews and data analysis to identify Métis older adults' experiences on their traditional land.

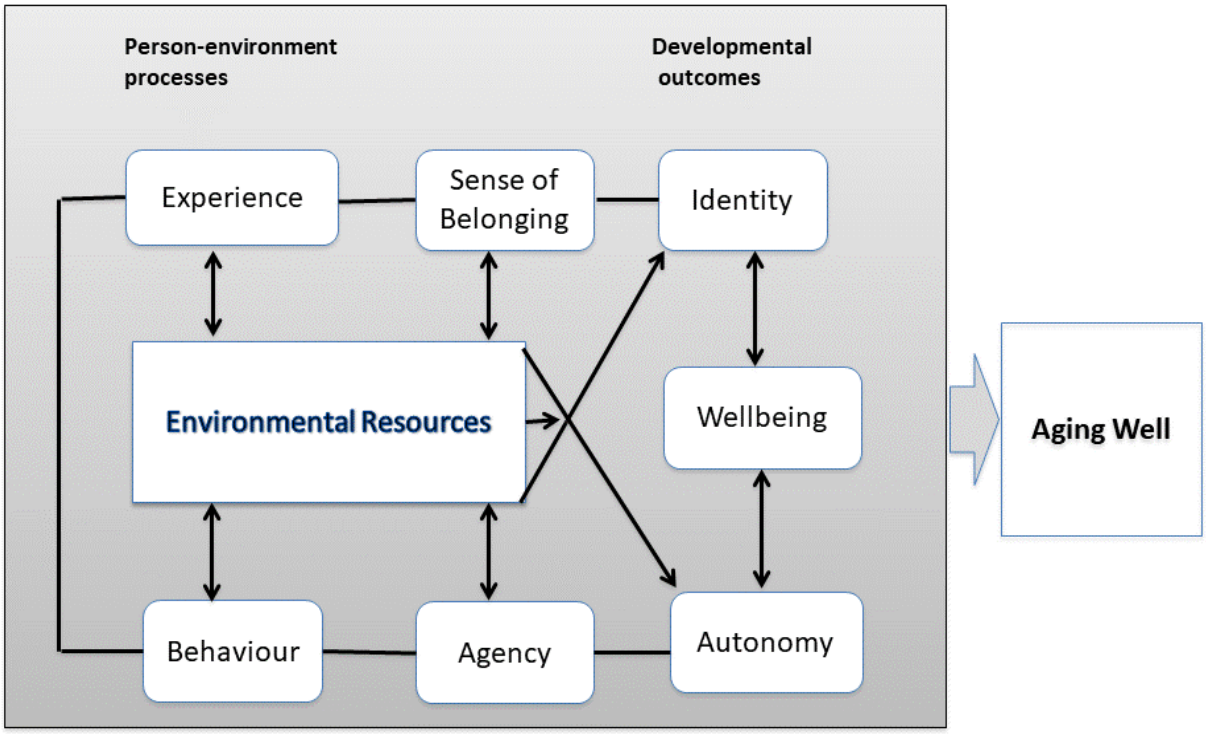

Figure 2.2. Person-environmental interchange framework of aging well. Source: Adapted from Wahl et al. (2012).

The framework demonstrates the complexity of PEI as people age in their community. It outlines two key processes of person-environment interchanges, *environment-related belonging* and *environment-related agency*. Environment-related belonging results from experiences and related to subjective evaluation of a place. This includes how spaces become meaningful places, bonds to the physical environment, and behaviours over time in the physical environment (Hand et al., 2018; Wahl et al., 2012). Environmental-related belonging is explained by a range of environmental experiences, including a positive connection to the environment (Liebenberg, Wall, Wood, & Hutt-MacLeod, 2019; Peters, Stodolska, & Horolets, 2016; Wahl et al., 2012). Wahl et al. (2012) note that environmental-related experiences, among other factors, contribute to a sense of belonging and the interpretation people give to a place, to a greater extent, guides the cognitive and emotional representation of that place (Liebenberg et al., 2019). This makes a place a landscape of memories and value, providing a sense of identity (Tuan, 1977; Wahl et al., 2012). Thus, attachment and identity explain how space can turn into place.

In elaborating PEI, Wahl et al. (2012) suggest that changes in the physical environment, such as in climatic conditions, building structures, and community design, contribute significantly to environmental experience. However, a key challenge for older adults is to continuously adjust to the various changes occurring in their physical environment for their health and wellbeing. The exercise of agency becomes unavoidable for older adults in such situations (Iwarsson et al., 2007; Wahl et al., 2012).

The second process, environment-related agency, involves goal-directed behaviours including perceived control over the environment (Hand et al., 2018; Wahl et al., 2012). Environment-related agency refers to the process of becoming a change agent in one's own life by adopting intentional and proactive behaviours, which are related to the environment, to increase the likelihood of successful living (Wahl et al., 2012). It deals with "active use, compensation, adaptation, retrofitting, and creation of places" (Wahl et al., 2012, p. 114). It includes the creation and sustenance of places and adaptive strategies, including reactive and proactive behaviour, to increase the ability to obtain resources to satisfy a need while sustaining the environment (Abu & Reed, 2018; Wahl & Oswald, 2010). It means that older adults are not pawns in the environment, but rather active agents who can make changes to their environment to satisfy their need to maintain autonomy (Wahl et al., 2012).

Wahl et al. (2012) assert that aging well is defined by the ability to maintain the "highest autonomy, wellbeing, and preservation of self-identity." These indicators are seen as the endpoints of the complex interaction between people and their environment to age well. In the framework, autonomy refers to independence — the ability of an individual to live self-sufficiently to achieve freedom in life to grow older. It is essential to adapt to the environment in order to maintain autonomy.

Therefore, the PEI framework of aging well contributes to understanding how individuals interact with their natural environment and take into account the influence that environmental factors have on older adults' behaviours and health outcomes. It puts together all the elements that sought to elicit the knowledge required for the integration of the environment and aging well in place. Also, the application of the framework to this thesis respects and complements Indigenous approaches to health, which are grounded in the beliefs that there are relationships and interactions between individuals, communities, and their environment (C. Reading & Wien, 2013), all of which are acknowledged within the framework.

2.6 Ethical Partnership with Indigenous People

Historically, researchers have exploited, misrepresented, and pathologized Indigenous People (Castleden, Morgan, et al., 2012). Furthermore, numerous Indigenous communities have seen little benefit and have experienced harms resulting from their participation in health research. Many research projects conducted in Indigenous communities have not reflected Indigenous ways of knowing and worldviews (Castleden, Morgan, et al., 2012). Innumerable instances of culturally insensitive and exploitative research in Indigenous communities have fostered mistrust toward research and increased calls for ethical research by creating spaces for Indigenous communities to take greater ownership over research (Brant Castellano & Reading, 2010; Castleden, Morgan, et al., 2012; Tobias et al., 2013).

In response to the legacy of exploitive health research, there has been a shift toward ethical engagement, which began in the 1990s (Ermine, 2007). Since then, there have been many discussions about improving research relationships with Indigenous People. The Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2) is one of such efforts. The document was developed to guide research involving humans. The TCPS 2 (2018) is the latest revision of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans. It replaced previous TCPS 2 (2014) as the official human research ethics policy of the Tri-Council Research Agencies.[10] However, the only changes made to Chapter 9 is the change of terminology from "Aboriginal" to "Indigenous." Chapter 9 (Research Involving the First Nations, Inuit, and Métis People of Canada) of this document seeks to redirect Indigenous health research toward the production of research that is focused upon benefitting communities and their unique health needs (Canadian Institutes of Health Research Natural Sciences and Engineering Research Council of Canada (NSERC), 2018). It highlights good practices for ethical conduct when conducting research with Indigenous People, and establishes protocols and ethical guidelines specifically for research being conducted with Indigenous communities where there is continuous involvement of community members at all stages of the research process (Canadian Institutes of Health Research Natural Sciences and Engineering Research Council of

[10] The Tri-Council Research Agencies are Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council of Canada (NSERC), and the Social Sciences and Humanities Research Council (SSHRC).

Canada (NSERC), 2018; Schnarch, 2004). Furthermore, the guideline also stresses the importance of ensuring that research involving Indigenous People is premised on "respectful relationships, collaboration and engagement between researchers and participants." (Canadian Institutes of Health Research Natural Sciences and Engineering Research Council of Canada (NSERC), 2018).

The introduction of these ethical guidelines in Canada has seen an increase in the awareness of researchers to conduct ethical research with Indigenous People. This has seen a movement from research approaches that marginalize Indigenous knowledge to approaches where Indigenous and Western knowledge can co-exist. Many scholars have propounded several concepts on how to bridge the two forms of knowledge systems (C. Bartlett, Marshall, & Marshall, 2012; Ermine, 2000). These concepts include Two-Eyed Seeing (C. Bartlett et al., 2012) and ethical space (Ermine, 2000, 2007).

M. A. Hart (2010) describes the ethical value of seeing together from Indigenous and Western worldviews by combining and including the perspective of each. Elders Albert and Murdena Marshall describe this as bringing together of diverse knowledge systems and research practices that build strength from one another as Two-Eyed Seeing (C. Bartlett et al., 2012). The Two-Eyed Seeing approach suggests a way for Indigenous and Western worldviews to inform multifaceted issues for a better understanding (Martin, 2012). The approach seeks to avoid knowledge domination and assimilation by recognizing the value of information from both worldviews (C. Bartlett et al., 2012; Marshall, Marshall, & Bartlett, 2015).

Similarly, Willie Ermine describes a theoretical space between Indigenous and Western worldviews as the "ethical space of engagement" (Ermine, 2007). This is where difference and diversity can be explored and affirmed (Brant Castellano, 2004; Ermine, 2000, 2007). Ethical space uses a partnership and collaboration model where Indigenous People and Western researchers can reveal values and cultural differences that otherwise may not be discussed during the research process. As a practice, ethical space involves stages from the initiation of a research project to the dissemination of project results. Chapter 9 of the TCPS 2 informs the creation of an ethical space where researchers and Indigenous communities can participate collaboratively in research projects based on mutual respect and trust (Brant Castellano & Reading, 2010).

Community-based participatory action research (CBPAR) is an approach recommended by the TCPS 2 Chapter 9 to honour and respect Indigenous worldviews. CBPAR involves all

research partners at every stage of the research process and recognizes the unique strength each brings to the research (Castleden, Morgan, et al., 2012). It is centred around integrating knowledge and actions leading to practical outcomes that can positively influence the lives of community members (Minkler & Wallerstein, 2008; Wallerstein & Duran, 2006).

CBPAR further supports the optimal ethical engagement of Indigenous People, one of the main principles outlined in Chapter 9 of TCPS 2. CBPAR actively engages Indigenous communities in the research process through respectful relationships, collaboration, and partnership between researchers and Indigenous communities. The positive relationships established between researchers and Indigenous communities promote co-learning and capacity building, which guide the researcher to recognize the importance of learning from the expertise and local knowledge of community members and vice versa. The collaborative process of co-learning under CBPAR is one of the central features of Chapter 9 of TCPS 2 as a movement away from a researcher holding themselves as an expert to provide knowledge and skills to participants (Tobias et al., 2013; Wallerstein & Duran, 2006). The interactions that will occur under CBPAR could allow knowledge and skills sharing between researchers and community members, thereby ensuring the emergence of relevant local knowledge.

2.7 Summary

This chapter has engaged with the existing literature in the area of Indigenous People's health, aging well in place, Indigenous People's relationship with the land, theoretical foundation, and ethical research partnership with Indigenous People. Indigenous People in Canada. The health and wellness of Métis people are conceptualized wholistically to include physical, emotional, cognitive, and spiritual domains. Métis are aging faster than the overall Canadian population and report more chronic conditions earlier in life. The chapter has identified that Métis people's relationship with their land is a critical component of their health and wellness. However, historical and other factors continue to impact negatively on their relationships with the land. This conceptualization suggests that space and place become both a protective factor and a stressor to health and wellness (Fernandez et al., 2020). Studies on the role of place in Indigenous health and wellness are gradually growing (Fernandez et al., 2020; Pace, 2020; Richmond, 2015; Tobias & Richmond, 2014; Willox, Harper, Edge, et al., 2013; Willox et al., 2012). However, researchers have not examined the critical role of the land in aging well among Métis older adults. Understanding the perspectives of Métis older adults in Île-à-la-Crosse on

how the land influences their health and wellness is a critical starting point to aging well in this community. The following chapter presents a description of the community and my positionality in this study.

CHAPTER THREE: COMMUNITY CONTEXT AND POSITIONALITY

In 2015, the Truth and Reconciliation Commission of Canada (TRC) released a summary of its findings stressing the importance of renewing relationships and narrowing the gaps in health outcomes between Indigenous and non-Indigenous populations (Truth and Reconciliation Commission of Canada, 2015). Given my status as a newcomer to Canada, I consider it a duty to be involved in this process. It is in this context that I provide this reflection on who I am in this project. In the next section, I describe the community of Île-à-la-Crosse. This is followed by my positionality statement.

3.1 Métis Community of Île-à-la-Crosse

To honour the Métis perspectives that are critical in driving this project, this section describes the community. The community of Île-à-la-Crosse is the second oldest settlement in Saskatchewan (Macdougall, 2006). It was established in 1776 as a fur trading post in the region (Macdougall, 2006; Oosman et al., 2013). The first residents of the community were a product of intermarriages between local Cree and Dene women and French, English, and Scottish fur traders (Macdougall, 2006). In the late 18th and early 19th centuries, outsider males found entry and gained acceptance within the socio-cultural structure by marrying local, first-generation Métis women (Macdougall, 2006).

The community is in northern Saskatchewan, on the west side of Lac Île-à-la-Crosse, on the southern peninsula (Macdougall, 2006). It is part of the Mid-Boreal Upland, and south of the Canadian Shield on Treaty 10 Territory, and the homeland of the Métis (Sakitawak Development Corporation, 2018). The Shield has hundreds of lakes and rivers. It is dominated by the boreal forest ecosystem, characterized by coniferous trees such as tamarack and red cedar, and provides a home for wildlife such as a variety of fish species, waterfowl, moose, deer, caribou, and beavers. (Macdougall, 2006; Sakitawak Development Corporation, 2018). Figure 3.1 identifies the geographical location of Île-à-la-Crosse. The closest larger centres from the community are Meadow Lake (151 kilometres South-West), Prince Albert (285 kilometres South-East), and Saskatoon (520 kilometres South-East) (Macdougall, 2006). The interactions between the community and the centres provide an opportunity to share findings of this project with a broad network of stakeholders (Oosman et al., 2013).

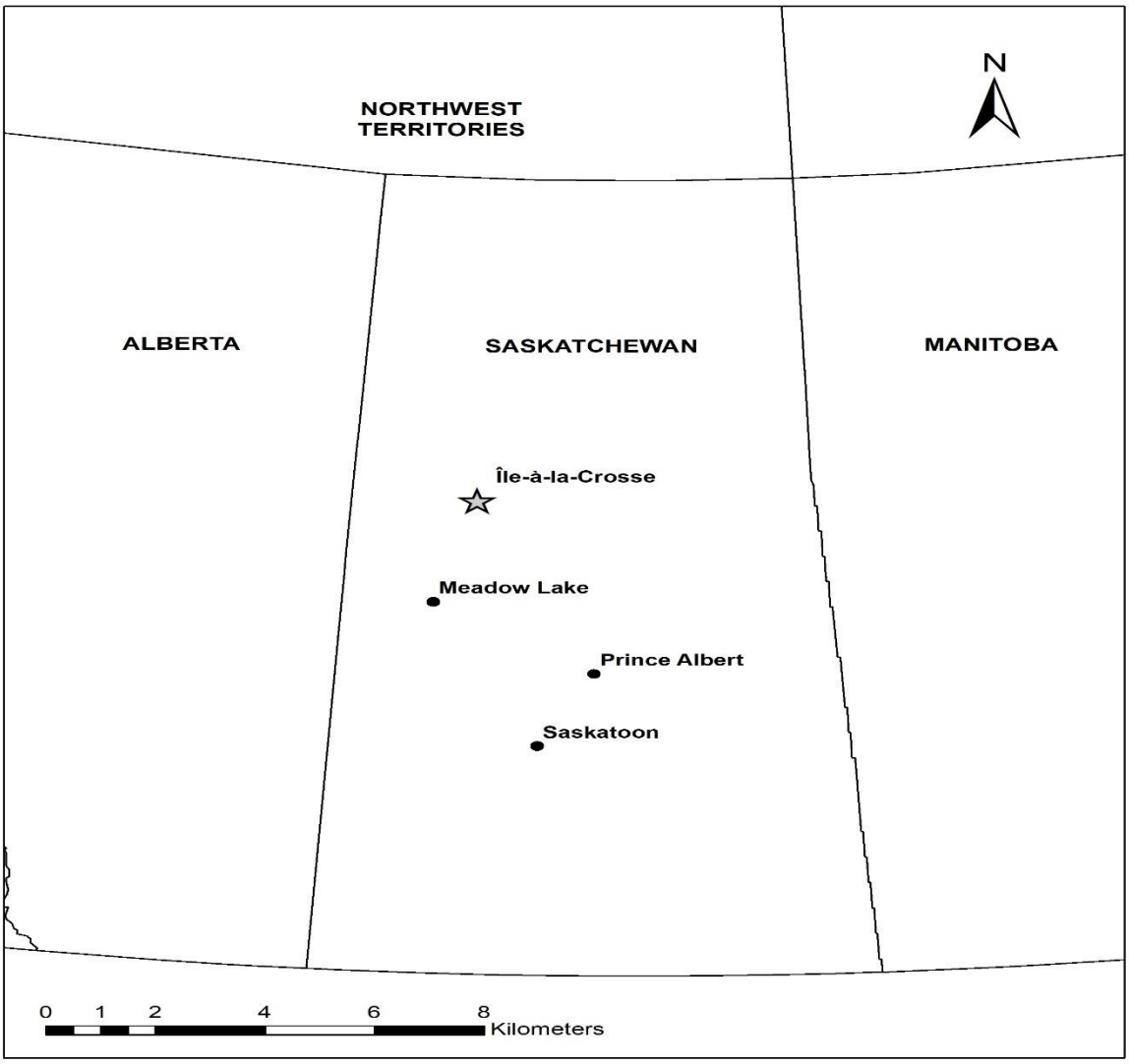

Figure 3.1. Location of Île-à-la-Crosse.

The Roman Catholic Church operated a residential school known as the Île-à-la-Crosse Boarding School in the community from 1821 to 1976. The school was demolished in 2017 (Sakitawak Development Corporation, 2018), but remains an important landmark symbolic of the community's history. The community members in Île-à-la-Crosse have a special relationship with the land. Historically, Métis in Île-à-la-Crosse participated in traditional practices, such as gathering berries, hunting, and fishing. Its inhabitants also gardened at a community site in order to supplement food obtained from the wild (Sakitawak Development Corporation, 2018). Today, life in the community continues to centre around the land. Many people in the community engage in agriculture and resource-based industries such as snaring, berry picking, logging,

fishing, and mining. However, people are also employed in the health, social, and educational service areas.

According to Statistics Canada, in 2016, the community had a total population of approximately 1,296 people. This is a decrease of the community's population by 3.4% in 2006 and 5.1% in 2011, which were 1,341 and 1,365 people respectively (Statistics Canada, 2007, 2017c). Statistics Canada reports that over 63% of the total number of people in Île-à-la-Crosse are adults and seniors. Specifically, children (under 15 years) comprise 27% of the total population, youth (15–19 years) represent 9%; adults (20–64 years) represent 55%; and seniors aged 65 years and older represent 9% of the community's total population (Statistics Canada, 2017c). The median age in the community increased from 27 years in 2006 to 29 years in 2016, which is lower than the provincial median age of 37.8 years. In 2016, there were 120 people aged 65 and over in Île-à-la-Crosse, 90 of whom were between the ages of 65 and 79 years, and 20 were aged 80 years and over (Statistics Canada, 2017c). The majority of the population speaks English, whereas smaller proportions speak *Michif*[11], *Cree*, and *Dene* (Statistics Canada, 2017c). The majority of the people in the community (98.77%) identify as Indigenous (Métis and First Nations), with Métis constituting the majority (Macdougall, 2006; Statistics Canada, 2017c).

Although the community has a young median age, Figure 3.2 shows that over the years, the number of older adults in the community has increased. Also, as noted in Chapter 1, Indigenous adults experience more chronic health conditions than the general Canadian population. Not only are health disparities apparent for Indigenous People in Canada, but poorer reported health outcomes are also found in the rural Indigenous population, compared to the urban population (Wilson et al., 2010). Thus, aging well is a priority in the community.

[11] This is a unique language of the Métis people based on a combination of French and Cree. Retrieved from http://albertaMétis.com/culture/michif/ on January 17, 2020.

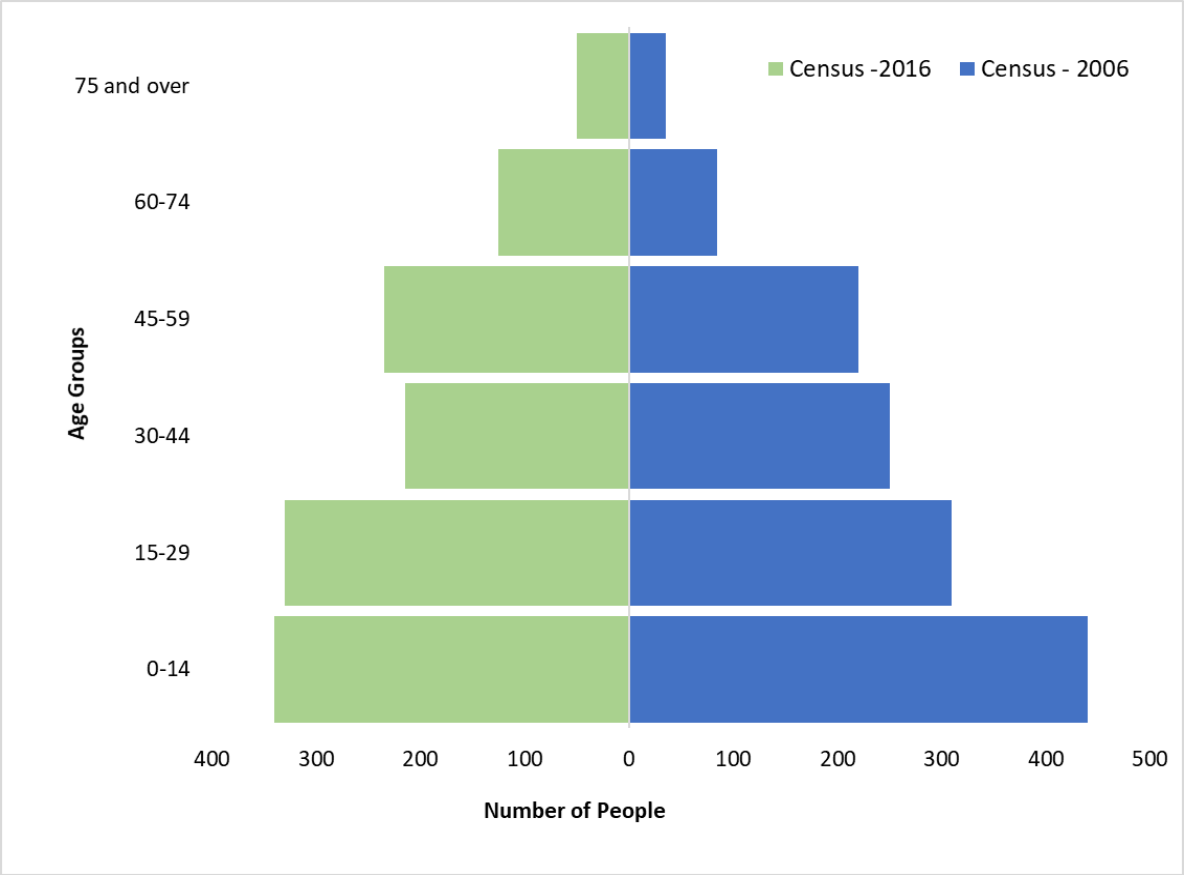

Figure 3.2. Population structure of Île-à-la-Crosse in 2006 and 2016. Source: (Statistics Canada, 2007, 2017c).

3.2 My Positionality

In conducting this research project, I needed to take into account my position and how that impacts the research process. Who I am as an individual, the context within which I have lived, and my relationship to the community with whom I worked can influence both how I carried out the research and the findings that I obtain. I have had to continually reflect on my position — aspects of my identity shaped by my race, beliefs, gender, cultural background, and my position as a researcher — in this study and its implications on aspects of this research project. I need to understand that my experiences, perspectives, and viewpoints in life are unique and different from those of community members. Constant awareness and reminding myself that these differences exist provided the basis for developing respectful relationships with community members. In this respect, I will describe my position in this research project from cultural

background, academic training, newcomer, and a father seeking to contribute to the broader goal of reconciliation through research and to broadly improve the health and wellbeing of Métis, First Nations, and Inuit older adults who desire to age well and in place.

3.2.1 My early family life experiences. I have often been asked since my arrival at the University of Saskatchewan about my motivation for working on a research project with Indigenous People as a newcomer. This question comes from academics and non-academics. To answer this question, I will weave a story around the journey that I had growing up that has shaped who I am. I was born and raised in Berekum, Ghana. This town is about 403 kilometres north of Accra, the national capital. Thus, I am influenced by the cultural beliefs and values of the Bono[12] people of Ghana.

I am the first child of my parents. I have three other siblings, two sisters and a brother. I was raised by my parents, who were both teachers at a local elementary school, and my maternal grandparents, who were both farmers. I had a traditional Ghanaian upbringing. Much of what I remember as a young boy was growing up in Berekum with my parents and at the village with my maternal grandparents. The greatest memories I had growing up were around spending time with my grandparents in the village. Each weekend and during vacation, I had the opportunity to visit my maternal grandparents in the village with my siblings. My mind is still filled with memories of the activities that I did with my grandparents on the land. Many of these activities were land based such as farming, hunting, trapping, cutting and stacking wood for cooking, and picking mangoes and mushrooms from the wild when the season comes. I learned traditional practices, including subsistence farming and food gathering practices at this place.

At the village, sometimes I would explore and play on the land with my siblings and other children using palm fronds and sticks to build makeshift houses. We would pick our slingshot and explore the forest to hunt little ducks. During the evenings, the adults would tell us stories. I still remember the numerous stories my grandparents told me with the moral lessons drawn from them. This is part of my culture and defines who I am.

Generally, I had positive experiences with these land-based activities, which paved the way for me to understand the relationship between the local people and their land. I have learned

[12] This is one of the groups of the Akan tribe in Ghana. They are mostly found in the middle belt of Ghana. The local dialect of the Bono people is Bono.

to appreciate this relationship directly and indirectly: more directly through the guidance and directions from my parents and grandparents as well as other community members, and indirectly through my personal experiences and watching others do various activities on the land. I keep enhancing this knowledge as an adult by asking questions to reinforce what I know. Being aware of my role as a father, my desire to teach my children this knowledge continues to push me to ask questions and learn more.

3.2.2 My educational experiences. I pursued my first degree in geography at the University of Cape Coast, Ghana. In my third year at the university, I was introduced to topics in health and medical geography, which sparked my curiosity and interest. After graduating with a Bachelor of Arts degree, I worked in multiple organizations. During this time, it became more apparent that many people were experiencing diabetes and emerging infectious diseases (EIDs), such as tuberculosis. I was curious about researching any of these conditions by enrolling in a graduate program. However, I was interested in studying outside of Ghana. This brought me to Saskatoon, Saskatchewan.

As a newcomer to Saskatoon, I heard a lot of negative stories about Métis and other Indigenous People. For instance, I was advised against renting a place in the westside of the city. I was told that part of the city has a high crime rate because that is where most Métis and other Indigenous People reside. This advice came from some friends from Ghana, who were already residents in Saskatoon, as well as some Canadian friends. These stories made me develop some negative stereotypes about Métis and other Indigenous People. However, these perceptions were challenged in both my MA and PhD training.

My MA research thesis was conducted with Métis in Saskatoon, with the Métis Nation of Saskatchewan (MN-S) as my research partner. The project found that the preconception that most Métis live in the western part of Saskatoon does not match reality. The study found that many neighbourhoods in the east have a substantial Métis population. The spatial prejudice of assigning Métis and other Indigenous People to the west of Saskatoon — an area having low socioeconomic status compared to the east (Anderson, 2005) — kept me thinking about the stories I heard as a newcomer. As I reflect critically on this, I realized that systemic racism and discrimination might have influenced some of the stories. Through this, I began to move away from the generalized negative assumptions to perceiving Métis as a cultural group with a unique

worldview. The knowledge gained and the training I received during my MA were critical and laid the foundation for an understanding of Métis history and culture.

3.2.3 Positioning myself within this PhD project through the 4Rs. I am a newcomer to Canada (an "outsider") working with the community of Île-à-la-Crosse on this project. The fact that the community members welcomed and accepted me to their community gives me something to think about critically. In this section, I outline the issues of positionality that I experienced during the completion of this project through the 4Rs — relevance, respect, reciprocity, and responsibility (Kirkness & Barnhardt, 1991).

In conducting this research project, relationship and relationality were critical components to my interactions with community members. Throughout this research, the importance of building and maintaining relationships with the research community remained at the forefront of my mind. During my initial visit to the community, I had the feeling of being an "outsider." I was concerned about how the community members would perceive me. My main concern was how this was going to impact on my relationships and acceptance in the community.

I was fortunate to have my co-supervisor (Dr. Sarah Oosman) and my advisory committee member (Dr. Sylvia Abonyi), both academic co-leads on the *Wuskiwiy-tan!* project, lay the foundation for building a trusting relationship with the community. They introduced me to TJ Roy and Liz Durocher (community co-leads of the *Wuskiwiy-tan!* project), as well as other community members. Having Sylvia, Sarah, TJ, and Liz "carry me under their wings" led to my acceptance in the community. For instance, any time during introductions, Elders,[13] as well as other community members, would often ask me who I was. Telling them that I am a student working on a research project with TJ, Liz, Sarah, and Sylvia was enough to put both of us at ease for fruitful and transparent discussions about myself, family, and the research project.

I committed to building on these pre-existing relationships as a starting point, which enabled me to move independently around the community to forge trusted relationships

[13] An Elder in Métis culture is used as a title for people who have earned respect in their community through their wisdom, knowledge of the community's culture, harmony, and balance of their actions in their teachings (Macdougall, 2006). It is important to note that being an Elder is not defined by age. However, in this study, the term "Elder" is used to refer to people the community recognized as such by community members, who are aged 55 years and older.

independent of the relationships my supervisors have in the community. I spent the first two years of my PhD program getting to know several community members and building trusting and respectful relationships. The meetings and discussion that occurred within this time with community co-leads and other community members were important in shaping the focus and my approach to this project. The community members clearly described their expectations of this project. While I was in the community, there were critical conversations around the land among community members. Almost everybody with whom I interacted spoke passionately about their land. Most of the time, these conversations centred around land reclamation. For instance, I observed a meeting where community members gathered to discuss the "Métis Framework Agreement for Advancing Reconciliation." Land claims dominated the discussion at this meeting. I heard many comments pointing to the importance of the land to the community. The longer I sat through this meeting, the more I felt strongly pulled to be part of research on Métis people and the land. During further discussions with community members, they identified gathering information about community-based understandings of their land and aging well as a research priority. Interestingly, this topic aligned well with my background and interest.

Also, during this time, I engaged in many community-based activities aimed at building respectful relationships. For instance, I attended community events, including "walk a mile in her heels" (a fund-raising event) and sweat ceremonies, among others, to familiarize myself with the community and to become acquainted with community members. Most of the community members I met at these events were welcoming and interested in the research project. These activities supported in building relationships and readiness for my research collaboration. Some of these events also provided the opportunity for me to ask questions about practices and protocols specific to the community.

In addition, the Elders did something that was perceived as a sign of my acceptance to the community and readiness for research collaboration. On one of my trips to the community, we used the ice road.[14] Since it was my first experience on the ice road, I was very nervous. When the Elders in the community heard the story, they had a good laugh and gave me the nickname

[14] The ice road is also known in the community as the bush road. During the winter months, the community can be accessed via this road. The road shortens the travel distance to the community by approximately 50 kilometres. The ice road starts at the Canoe River (off Highway 155) and crosses Lac Île-à-la Crosse to the Bouvierville area of the community (Sakitawak Development Corporation, 2018).

Maskwamî nâpêw, which means "Iceman." To me, this was an indication that the Elders see me as someone who can be welcomed to the community. It meant that the community members were open to the work in which I was engaging with them. At this point, I became increasingly mindful of my responsibility to ensure that I represent myself appropriately. I felt a lot of responsibility on my shoulders to reciprocate this gesture by giving back to the community. Giving back to the community meant respecting the worldview and practices of the Métis, as well as the continuous maintenance of the relationships built over the years. It also involves establishing respectful, reciprocal relationships and emphasizes the mutual nature of knowledge creation and sharing of knowledge in a respectful way.

During my interactions with the community members my identity as an African, a newcomer, a father, and a researcher was both a hindrance and a boon. I realized that my identity as a person of colour impacted negatively on how some community members perceived me. At certain times, I interacted with some community members that I believe were uncomfortable with me engaging in this research with their community. The actions of these community members were informed by pre-existing perceptions that a person like me brought to the community. This was informed by their lived experiences. I did not identify with these perceptions.

I used different strategies to strengthen the trust gained from the community and to establish who I am. For instance, I went to the local radio station a couple of times for interviews about who I am and why I was in the community. I also used my time in the community to talk to community members about my research project. These conversations were critical for the community members to know who I am. Since I was using a bicycle for transportation during my fieldwork, anytime I was on the radio I introduced myself as "the black guy on a bicycle" and spoke extensively on why I was in the community. Most of the community members began referring to me as "the guy on a bicycle." This description allowed me to distinguish myself from other people of colour who come to the community.

However, in some instances, my identity as an African with a shared background of having been once colonized by the British allowed me to find common ground with some of the community members, as well as being aware of the unique differences. During one of my conversations with some of the community members, one of them asked where I was from. When I told him that I am from Ghana, West Africa, he began talking to me about colonialism in

Africa. He told me that he knows many countries in Africa were once colonized and asked whether Ghana was colonized. When I answered in the affirmative and told him that Ghana was first colonized by the Portuguese and later the British, he said, "Wow, you see, so we as Indigenous people and you guys have something in common." Once I heard this, I became even more comfortable talking to people in the community. Based on the shared assumption of colonized positionalities, some participants shared personal information with me. There are times where I was asked to switch off my voice recorder for some off-the-record discussions.

Because of my background as African and a newcomer to Canada, most of the community members saw me as a "complete outsider," who lacked knowledge of the history and traditional practices of Indigenous People in Canada. This perception of "who I am" encouraged people to share their stories with me freely. Some of the participants agreed to an interview to share their stories of life on the land with me because they saw me as an outsider who has a genuine interest in learning from them. The presumed lack of knowledge about the Indigenous People in Canada meant that community members viewed me as a researcher with less power and a non-influential position. However, some of the questions I asked during interviews and informal conversations in the community proved my awareness of some of the issues. When some community members realized that I knew about some of the issues, they afforded me a level of respect and trustworthiness.

My identity as an adult male and a father drew me to many community members. My identity as a father connected me to male older adults. Many saw me as somebody with whom they can share their stories. Most of our initial conversations in this area were centred on my experiences of raising my children in a context different from where I grew up. I received guidance from them on how to navigate my way in the Canadian environment to successfully raise my children. Through these conversations, I became connected to many of the male older adults and received mentorship from them through the teachings and stories from their Métis culture. The mentor-mentee relationship not only created the right conditions for older adults to share their stories with me but also shaped my parenting practice and how I relate with my children.

The experiences of where and how I grew up influenced my relationships with the community members. During my time in the community, I connected with most of their land-based practices because these activities resonated with my Ghanaian upbringing. For example,

hunting, trapping, and cutting and stacking wood are all activities I knew from my upbringing. I was always eager to join community members on the land because that is how I grew up. Whenever I went on the land to participate in land-based activities such as hunting and trapping, it brought memories of my childhood with my grandparents. The community members were surprised at my extensive knowledge of these land-based activities. Most of the time, this initiated conversations. I told the community members about some of the stories my grandparents told me. Some of the community members were visibly surprised about the similarities in the traditional lifestyles. Reflecting on these, I feel that the prior knowledge allowed prior insights into some of the Métis land-based activities and connected me to many community members.

However, my noticeable identity as a researcher, in some instances, served as a limitation in my interaction with some community members. For instance, as a researcher affiliated with the University of Saskatchewan, some of the community members declined a request for an interview. Some of them indicated their fatigue with researchers coming to the community. One of the community members told me, "I have lost count of the number of researchers who have spoken to me, but sometimes I feel we have nothing in the community to show for it." Even though I managed to convince some of them to participate in this study, some declined to participate.

In designing this project, it was essential to think about the relevance of the project to both my academic requirements and the needs of the community. Even though I see this project as partial fulfillment for the requirements of my PhD degree, that was not entirely my focus. Throughout the research process, the relevance of this project to the needs of the community remained at the forefront of my mind. As indicated earlier, in order to make this project relevant to the community, I ensured that the direction and focus of this project came from the community. Even though this thesis will count toward the award of a PhD, I was mindful of the impact the findings of this project will have on the community, such as to direct services, programs, and policies. After the project, I presented my findings to the community. The community was excited about these findings. For example, some of the participants were particularly excited about the way the project reflects their voices and perspectives. Others indicated that some of the maps produced would be relevant in their land claims negotiation. When I was discussing some of my findings with one of the Elders in the community, he stated,

"This is very informative. I think we might have to get you to produce some of these maps for us. At least it will give the government an idea of how far our Traditional Territory extends." Despite being considered by the community as an outsider and a researcher, through the research process, I was also seen as a partner and an advocate, someone who can contribute meaningfully to the community.

As I was moving through the various stages of this research project, the experiences I gained have enabled me to develop my skills in establishing respectful relationships and changed my preconceived assumptions. The relationship with the community has helped me to challenge preconceived assumptions held about Métis people that had been passed along to me, including negative stereotypes of who they are. By living with the community members, the preconceived negative perceptions I was having about Métis people and their communities were reversed. For instance, during my time in the community, I realized that the Métis have a strong kinship structure that enables them to support each other. I was particularly in love with the role older adults and Elders play in the teaching of Traditional Knowledge, which resonated with my Ghanaian upbringing. I also experienced the "Métis hospitality" once the community members understood my motive of being in the community. The community members were open and friendly, which encouraged me to spend time learning about Métis culture and practices.

Retrospectively, I believe that my upbringing, culture, values, beliefs, training, and interactions with community members have created and shaped who I am and my approach to this thesis. It has influenced how I understand the world. This understanding has helped me to create a space within myself to hear my inner knowledge, allowing me to interact with other people effectively.

3.3 Summary

This chapter started with a description of the Métis community of Île-à-la-Crosse. I also described my positionality as a non-Indigenous — newcomer to Canada — student researcher in the community. My positionality described in this chapter has clarified my personal life experiences that have shaped and contributed to who I am. I have situated my positionality in this research project using the 4Rs — relevance, respect, reciprocity, and responsibility (Kirkness & Barnhardt, 1991) — to describe how I navigated my way in the community to establish trusted and respectful relationships to ensure the successful completion of this thesis. It is vital to pay attention to positionality issues to determine how they affect the research process

and make adjustments. For example, from my experiences in the Île-à-la-Crosse, I can say that juxtaposing my positionality with the way some of the community members initially perceived me helped me in a more meaningful way to fully engage in critical reflexivity that allowed engagement with the research process as well as the community members. The personal experiences shared in this chapter presents useful information for non-Indigenous researchers, especially newcomers, working in partnership with Indigenous communities. The next chapter presents the research methodology employed in this study.

CHAPTER FOUR: METHODOLOGY

This chapter outlines the overall methodological approach adopted to carry out this thesis, including data collection techniques and analysis that inform the results of this thesis. It also describes the processes and procedures through which this thesis was carried out to create shared knowledge and understanding of the space, place, and aging well experience for older Métis adults. The methodology requires participatory methods. This is seen as a move away from past occurrences in Indigenous communities where research projects were conducted in ways that failed to include and engage the community members (Castleden, Mulrennan, & Godlewska, 2012; Koster, Baccar, & Lemelin, 2012). In the past, research has been conducted "on" Indigenous People without permission from the communities. These studies did not benefit these communities and rendered the importance of respectful relationships, reciprocity, and responsibility to Indigenous communities invisible (Castleden, Morgan, et al., 2012). As a means of avoiding this exploitive relationship between the academic researchers and the community, this project adopts a community-based participatory action research (CBPAR) model as a respectful way of actively involving community members in this project.

4.1 Research approach

In this project, I employed a relational approach, which requires the researcher to develop a relationship and engage with the community. The relational approach was built on the critical relationships Drs. Sarah Oosman and Sylvia Abonyi have with the community. My relationship with the community started before the commencement of this project and has continued in the ensuing years with lasting relationships. The establishment of these strong, respectful, and trusting relationships were fundamental to carrying out this project due to the contribution that both the academic team and community members provided throughout the research process.

The collaboration and partnership within this project are consistent with Two-Eyed Seeing (Marshall et al., 2015) and the use of an ethical space approach (Ermine, 2007). Within the application of Two-Eyed Seeing, the Métis worldview represented the dominant eye and occupied a privileged location within this project.

4.1.1 Integrating community-based participatory action research (CBPAR) into this project.

Community engagement ensured the development of a respectful and trusting research

relationship with community members of Île-à-la-Crosse. In this project, I was lucky to be integrated into pre-existing relationships, Drs. Sarah Oosman and Sylvia Abonyi have developed with the community over the years. Building on these established relationships ensured the creation of an environment for me to be able to ask members of the community about their protocols and procedures.

The collaboration and partnership approach facilitated equity and power sharing in the research relationship. This was accomplished by practising cultural humility.[15] It required suspending my assumptions about the Métis based on generalizations about Indigenous People and take a critical view of the origins of these assumptions and generalizations in stereotyping, ignorance, and racism. The CBPAR approach allows the views and perspectives of community members to be integrated into every stage of the research project, including data analysis. CBPAR is consistent with the values underpinning relationships identified as 4Rs in the previous chapter.

CBPAR in this project encouraged open dialogue among researchers and community members. In this project, initial discussions allowed the community and academic research team members to establish a common goal of conducting research on the role of the land in aging well. These discussions took place through several face-to-face meetings with my supervisors and the community co-leads, where the overall purpose of this project was established. Between September 2015 and August 2017, meetings were held with community stakeholders to discuss this project. I engaged the community members to identify local priorities for the research and to draw on local experiences and knowledge. Working together as a group and discussing local priorities for research allowed the community to share their perspectives and areas of concern with me. For instance, as indicated earlier, I was invited as an observer at a meeting to discuss the "Métis Framework Agreement for Advancing Reconciliation." At this meeting, members of the community spoke passionately about their land claims, pointing to the importance of the land to the community and the need to reclaim their traditional lands. These conversations allowed me to listen to why the issues raised were important to the community.

[15] Cultural humility is defined as "a lifelong commitment to self-evaluation and self-critique" to "redress power imbalances in client-practitioner relationships (Tervalon & Murray-Garcia, 1998, p. 123).

Community engagement in this project also involved working with the community on a community engagement document for this project (Appendix B). We began putting this document together after my first few visits to the community. To ensure that my research questions were community-driven, I met regularly with the community co-leads and other community members between September 2015 and August 2017 to discuss and finalize the questions. Some of these meetings were in person in the community, and some were over the phone and by email. I adapted the questions based on the ideas that emerged from my interactions with Métis community members. A draft copy was submitted to the community co-leads in September 2017. This document was subsequently discussed and reviewed by the community co-leads, Member of the Legislative Assembly and Mayor to ensure that community-specific ideas that came out during our discussions were integrated into this project. A final document was developed jointly between the community co-leads, my supervisors, and me. The formal community engagement document outlines the purpose of the project, the research questions, and the approaches to answering these questions. The document was designed collaboratively as a tool to support the university-community partnership established through the *Wuskiwiy-tan!* project and to instil a sense of ownership and participation among community members. The community engagement document was recognized as a living document that was edited and modified as needed to continue to ensure that community priorities were driving this research project. The CBPAR approach applied in this project allowed for these continual modifications and ensured that the research process and activities were responsive to community.

In this project, the perspectives of the community members were instrumental in guiding me to understand the practices within the community, which were important in my interactions with community members. In line with the CBPAR approach to this project, I consulted and collaborated with the community members by maintaining regular communication through interactions and informal conversations by spending time with people, text messages, email, and telephone meetings. This relational approach ensured that I always took things back to the community co-leads, which supported collaboration and shared learning throughout the research process.

4.1.2 Ethnography. Ethnography aims to reveal the underlying patterns of behaviour and the meanings of a culture (Mendoza, 2016). It involves personal interaction of the researcher with participants, learning their culture naturally (Collier & Wyer, 2016). Ethnography recognizes that

local knowledge and culture reflect underlying beliefs and values, which also influence perceptions of health and wellbeing (Mendoza, 2016; Thomson, 2011). This PhD project used an ethnographic methodology to critically examine the Western concepts of space, place, and aging well from a Métis perspective.

Ethnography is inherently engaged and uses methods that are aligned with the research values, purpose, and questions underlying this project. This approach tends to focus on understanding interconnected reality between generations over time (Blackstock, 2010; Mendoza, 2016). In this research, ethnography was vital, eliciting the Métis older adults' relationship with their natural world and other generations over time. An individuals' relationship with people and the natural world has been identified as an important BOL principle (Blackstock, 2007). It is important to note, therefore, that the Western ethnographic approach to this project intersected and aligned well with Blackstock's Indigenous Breath of Life theory and ecological framework. Data collection tools used by ethnographers include interviews, oral history, participant observation, field notes, surveys, and document review. These tools of collecting data are highly congruent with Métis ways of knowing and Traditional Knowledge. Some of these tools were employed in this project to elicit older adults' perceptions and experiences.

4.2 Participants and Recruitment

A total of 25 Métis older adults (9 females and 16 males), age 55–90 years, who live in Île-à-la-Crosse, were interviewed for this thesis. Participants were recruited relationally. Some of the participants were already participating in the *Wuskiwiy-tan!* project, while others were recruited through snowball sampling. I spent time in the community to establish rapport and a trusting relationship with community members. Before the recruitment process, I planned for the approximate number of participants for this project. However, I did not plan for a specific number of men and women. Also, I did not recruit participants based on standard age groups — young old (55-65), middle old (66-80), and older old (81 and over) (Cantor, 1989). I visited many of the community members in their homes several times during my stay in the community. On many occasions, I received invitations from community members to partake in their land-based and other socio-cultural activities. Through these activities, community members felt comfortable to be part of this project and share their stories with me. Those who chose to participate in the project were encouraged to give the contact information of the researcher and

the community coordinators to other people they know who fit the recruitment criteria, with a request to contact the researcher or community coordinators if they are interested in participating. Most participants were recruited based on recommendations and introductions by community members and as a result of trusting relationships established during my visits to the community.

4.3 Ethical Considerations: Community and Individual Consent Procedures

Research ethics approval was obtained from the University of Saskatchewan Research Ethics Review Board (BEH 17- 432). Chapter 9 of the Tri-Council Policy Statement for Ethics on Ethical Conduct for Research Involving Humans 2018 (TCPS2), which includes guidelines specific to research with Indigenous People, informed the ethics application. The focus of this ethical guideline is to ensure that Indigenous worldviews, culture, and tradition are integrated into every stage of the research process. Community-level ethics approval was obtained through a community-university Memorandum of Participation (MOP) established under the *Wuskiwiy-tan!* project. This document outlines the roles and responsibilities of team members and the short-term and long-term management of project data. The development of this document created a safe ethical space for discussing these complex and sensitive issues. Further, the MOP ensured that the community remains as engaged partners in this project.

At the individual level, both written and oral individual approvals were used to obtain informed consent for different data collection activities. Written consent was sought for the interviews. The consent form (Appendix C) was reviewed with each participant, and any questions were addressed before commencing the interviews. Oral consent (Appendix D) was sought for participant observation activities that were captured in field notes.

4.4 Data Collection Tools

Information gathering in ethnographic research has been described as "watching what happens, listening to what is said, and/or asking questions through informal and formal interviews, collecting documents and artifacts — in fact, gathering whatever data are available to throw light on the issues that are the emerging focus of inquiry" (Hammersley & Atkinson, 2007, p. 3). Guided by ethnographic methodology, data for this project were collected through semi-structured and spatial interviews, geographic information systems (GIS), public participatory geographic information systems (PPGIS), participant observation, and field notes. Table 4.1

shows the research questions guiding this project and the various data collection tools that address them.

Table 4.1.

Research Questions and the Data Collection Tools That Address Them

Research questions	**Data collection tools**
1. How do Métis older adults perceive the land as part of their overall sense of place and wellbeing?	Semi-structured interviews, spatial interviews, participants observation, field notes, and PPGIS
2. How has the land changed over time, and how do these changes impact on their ability to age well?	GIS, semi-structured interviews, spatial interviews, participants observation, and fieldnotes
3. What are the adaptive strategies have Métis older adults used in order to age well in their current landscape, and how might these strategies differ from the past?	Semi-structured interviews, participants observation, fieldnotes

4.4.1 Semi-structured and spatial interviews. The study employed interviews to gain insight into the perceived influence of space and place on aging well. Interviews were conducted from February 2018 to June 2018 using interview guides (Appendixes E and F) developed in collaboration with the community. The interview guides ensured that all relevant areas were covered. By adopting a semi-structured format, participants were able to speak at length about their relationship with the land and I was able to pursue new leads I had not anticipated when developing the guide. Each participant was interviewed at a location of their choosing to make them comfortable. Further, I visited each of the participants multiple times for informal conversations before the formal interviews with them. This strategy enhanced the level of comfort felt by the participants during the interviews.

Even though all the participants spoke both *Michif* and English fluently, all the interviews were conducted in English. The use of English ensured that I understood the

responses and that I was, therefore, able to ask follow-up questions to clarify participant meaning and intent. However, participants were provided with the option to have their interviews conducted in *Michif* when they preferred. One of the community co-leads (TJ Roy), who speaks *Michif* fluently, offered to assist me with this. During the interviews, each participant was requested to participate in two types of interview — semi-structured and spatial interviews. As part of the fieldwork, an initial plan was made to pretest the interview guides, which were pilot tested with two participants (male and female) and adjusted for increased clarity.

4.4.1.1 Semi-structured interviews. Semi-structured interviews were conducted with 25 Métis older adults, who have had various forms of interaction with the land. Conversations during the semi-structured interviews focused on recording personal experiences, memories, and perceptions of living off the land, places of importance on the land, land-based activities in which they participated, how they feel when they are on the land, and changes they see occurring on the land and its effects on their health and wellbeing (Appendix E). I showed interest in our conversations and explained to the participants that I wanted to learn from them by listening to what they had to say about the land and aging well. The approximate time for these interviews was 30–40 minutes.

4.4.1.2 Spatial interviews. At the time of consent for the semi-structured interviews, participants were asked if they were also interested in participating in an individual spatial interview. These interviews were aimed at obtaining spatial information on place attachment. The spatial interview involved interaction with hard copy topographical maps. Each participant was asked to mark places of attachment on the topographical map and discussions centred around why these places are important to participants. It involved two main approaches: sit-down and walking spatial interviews. The decision to pursue one or the other of these approaches was left to the individual and reflected mobility issues or personal preferences. The sit-down spatial interviews were conducted together with the in-depth semi-structured interviews back to back with breaks between them. I used conservative estimates of locations based on participants' knowledge and ability to read maps to navigate their way on the land. Additionally, most of the participants have experience using topographic maps in the course of their land-based activities. This familiarity is likely to limit spatial errors in point locations identified by participants.

The walking spatial interview was similar to the sit-down spatial interview. However, with walking spatial interviews, the interaction with the map occurred on the land. For participants who volunteered for the walking spatial interview, I accompanied them to the mapped locations, and this is where the interviews took place. Five participants volunteered to participate in a walking spatial interview and 20 participants participated in the sit-down spatial interview. These interviews were audio-recorded. The guide for this interview (Appendix F) was in a semi-structured format.

4.4.2 Public participatory geographic information systems (PPGIS). In this project, interviews provided a local perspective on attachment to the land, changes occurring on the land, and how they impact on the health and wellbeing of older adults. However, in keeping with the participatory approach employed in this study, public participatory geographic information systems **(**PPGIS) analysis was drawn upon to map the places of attachment for older adults. PPGIS is a form of GIS in which "GIS technologies are used to produce local knowledge to include and empower marginalized populations" (Brown, 2012, p. 634). The strength in this application lies in its ability to engage local communities whose interests are often ignored in the traditional GIS applications (Brown, 2012). PPGIS works by including local communities in the generation and analysis of geospatial data by combining participatory and mainstream GIS technology.

In this thesis, PPGIS provided a spatial perspective on locations the study participants identified as places of attachment and allowed the mapping of land cover changes occurring in the community. I adopted a PPGIS approach that was easily adaptable by the participants and focused on recording local narratives and locations associated with their local knowledge. The places community members identified as places of attachment were captured through the spatial interview by presenting two topographical maps[16] to participants. These maps gave participants a general overview and detailed illustration of their land. The participants were asked to mark locations of places of attachment, and questions were asked about these places. These were mainly locations on traplines, hunting grounds, homesteads, and cabins. Participants were comfortable with this method because, for generations, Métis have been navigating their way on

[16] These are NTS topographical at a scale of 1:250,000 and 1:50,000.

land by using natural features such as rivers and lakes. Additionally, Métis land users have long been using maps to navigate their way on the land (Castillo, 2018).

4.4.3 Participant observation. The time spent in the community offered me the opportunity to participate in many local activities and to meet and interact with many community members. These interactions opened up new leads and insights on land and its impact on the health and wellbeing that did not arise during initial interviews but were used to fine-tune later interviews. For instance, through observation, I noted the importance of U-pick[17] to many older adults and asked questions about this during the interviews. I sought consent (Appendix D) to capture information in field notes when I was invited to participate in an activity and during casual conversations. Without participant observation, some of these details may have gone unnoticed. Participating in these activities was vital for data analysis as it provided me with firsthand knowledge of the context and allowed me to develop a deeper understanding of the significance of the land in the daily lives and wellbeing of Métis older adults.

4.4.4 Field notes. Field notes were used to capture all my observations. These include all activities observed during this study, such as decisions made during fieldwork, daily activities, and casual conversations with community members. Details include descriptions of events, individuals involved, "activities and interactions,"; quoting directly from what I heard, or the gist of what people said and observer's comments (J. W. Creswell & Poth, 2018). Observer's comments were mainly daily reflections of what I observed in the community.

The field notes were recorded at different locations in the community. The notes were both handwritten and typed on a computer. Additionally, each time I was returning by car from a visit to the community, I did self-debriefing by audio-recording my thoughts about what happened in the community. These audio recordings were later transcribed and used as field notes.

4.5 Data Analysis

4.5.1 Analysis of interviews and field notes. All the semi-structured and spatial interviews were transcribed verbatim. Inductive and deductive thematic analysis strategy was used to analyze the

[17] U-pick is a form of Pick Your Own farm operation, where community members go to the market garden in the community to pick their own berries for a fee.

field notes and interviews (J. W. Creswell & Poth, 2018; Fereday & Muir-Cochrane, 2006). This is a hybrid approach of thematic analysis that incorporates data-driven open coding and a priori coding. Other researchers (for example, Fereday & Muir-Cochrane, 2006; Oosman et al., 2019) have used this approach. This approach allowed for the tenets of the study's framework to be integrated into the process of the data analysis while allowing themes to emerge from the data.

During the data analysis, field notes and interview transcripts were read multiple times while listening to the audio recordings. The iterative reading allowed me to immerse myself in the data and become aware of key ideas and issues. The field notes and transcripts were imported into QSR International's NVivo 12 (QSR International, 2018), qualitative computer software. During the first stage of the analysis, an initial coding list using "participants' own words" was made through iterative reading. Through this, a substantive coding list was developed based on key issues that have been expressed by participants. In addition to the inductive open coding strategy, a list of codes was developed guided by elements of the BOL theory, PEI framework, and concepts from the health geography literature. The analysis also considered gender to better understand the specific needs of men and women for the aging well experience. This approach facilitated a connection among older adults' experiences and the literature while allowing for unanticipated observations to emerge (Oosman et al., 2019).

All the codes were entered in NVivo 12 as nodes. I applied the codes to the field notes and interview data to identify meaningful meanings (J. W. Creswell & Poth, 2018; DePoy & Gitlin, 2011). This process involved meaningful grouping of quotations from data with parts of data selected as representative of the codes. (Lewis-Beck, Bryman, & Futing Liao, 2004). Inductive coding continued throughout the analysis because new codes were added. The codes were grouped into emerging themes and patterns. The themes were organized to identify narratives on Métis perspective of space and place, emotional attachment to the land, and changes that are occurring on the land and its impact on aging well.

Even though I was responsible for coding and analyzing the data, I took steps to ensure Métis voices were privileged during the analysis. I acknowledge that the analysis of the interview and field notes data was from my Western perspective and as an "outsider" working in an Indigenous community. Therefore, at the advanced analysis stage, the themes emerging from the data were further clustered into broader themes by using the words of the participants. I ensured that input from the community occurred. I had several meetings with the community co-

leads to discuss the data and results. In keeping with the principles of the CBPAR approach used in this thesis, a summary of the codes and themes was reviewed and approved by community co-leads. I also met with the community co-leads several times to discuss and clarify my experiences. Through these conversations, I understood my experiences from the perspectives of the Métis community co-leads and further informed my field notes based on their Métis perspectives. This allowed me to continue to act with cultural humility and ensure that I was continually open to integrating Métis worldview to inform my own thinking and interpretation. Also, the participants had the opportunity to review the summarized themes and maps to confirm the accuracy of the descriptions. This step offered the participants the chance to hear the stories others told me and to verify the accuracy of the findings. Further, I had a meeting with the Mayor and council of the community to inform them of preliminary findings. The meeting allowed them to see my results and provide their comments.

4.5.2 GIS analysis. GIS is designed to analyze, manage, and display geographic information. Using a map to visualize spatial information may lead to better understanding and conclusions about a phenomenon (Brown, 2012). My GIS analysis involved digitizing land cover in the community and mapping places of attachment using ArcGIS 10.6 (Environmental Systems Research Institute (Esri), 2018).

4.5.2.1 Digitizing land cover. In order to digitize the land cover within the community's boundaries (see Figure 6.3, p. 106), a functional map for the community was created using Google maps and ArcGIS 10.6 base maps as references. In addition, I obtained two digital orthophotos (raster aerial images of 2005 and 2017) of the community with a resolution of 0.625 metres from the Saskatchewan Geospatial Imagery Collaborative (SGIC)[18] through the University of Saskatchewan Library. The ArcGIS 10.6 digitizing tool was used to classify these raster images into various land cover, including bare soil, grass/low-lying vegetation, impervious surfaces, open water, and tree canopy and stored in vector format.

[18] The Saskatchewan Geospatial Imagery Collaborative (SGIC) is a partnership between organizations with the aim of sharing knowledge and cost relating to acquiring and using satellite and aerial imagery for mutual public benefit. Retrieved from https://www.flysask2.ca/homepage/ on November 20, 2019.

4.5.2.2 Mapping places of attachment. The places participants identified on the topographical maps were later transferred and stored in GIS to determine specific places of emotional attachment. Some quotations from the interview data were added to one of the maps to give meaning to the locations. The distribution of places of attachment was mapped with a one-directional standard deviational ellipse to determine the directional trend of activities. It also provided spatial information on the clustering and dispersion of activities (Li & Tong, 2016; Read et al., 2010).

Throughout the data analysis (including the thematic analysis), I sought the support of my supervisors (Drs. Sarah Oosman and Paul Hackett). However, since the data analysis was done from my position as an "outsider" and my Western lens, I completed the GIS analysis by ensuring that the mapping and interpretation were informed by Métis perspectives. Similar to the thematic data analysis, direct quotations describing the meanings participants attach to some of the places were added to the map. After a preliminary analysis of the field data, the maps showing places participants identified were shared with participants to ensure that the point locations were accurate and reflect their perspectives. Subsequently, erroneous point locations were corrected.

4.6 Ensuring Trustworthiness Through Credibility, Transferability, Dependability, and Confirmability

The trustworthiness of qualitative research refers to the extent to which the findings of a study can be trusted. Guba and Lincoln (1989) have introduced criteria for determining the trustworthiness of qualitative research, including credibility, transferability, dependability, and confirmability. These authors suggest strategies for ensuring credibility, including prolonged engagement, persistent observation in the field setting, building trusting relationships with participants, learning the culture, debriefing, and member checking (see also, Morse, 2015). This project satisfied these criteria as described in previous sections of this chapter. Also, I debriefed with my supervisors and community co-leads throughout this research project to ensure that the necessary guidance and community protocols were provided and followed.

The findings of this project are specific to the Métis community of Île-à-la-Crosse, a community with unique historical, socio-cultural, economic, and political environments. The community, processes of community engagement, participants, eligibility criteria employed for the recruitment of participants, the sample size used, and the duration of the interviews have

been outlined clearly. This contextual information may provide the basis for applying the original findings and conclusions of this thesis to another context or population.

To ensure the dependability of the research findings, I kept detailed notes and journals throughout the entire research process. This includes documenting the choices made, actions in which I engaged, and thoughts about how things were going at each stage of the research through self-debriefing, repeated visits to the community, telephone calls, and text messages to the participants and community co-leads ensured that the information obtained was detailed, descriptive, and reflective of the views of the community.

Confirmability was attained through rich descriptions of the findings that include the voices of participants — in the naming of themes and the use of quotes. Also, I took steps to ensure that the findings and conclusions of the study are derived from the experiences of the research participants. Also, confirmability was made possible through the triangulation of methods, which reduced the biases of the researcher.

4.7 Summary

This chapter has shown the research approach, participant recruitment, ethical considerations, data collection tools, and analysis techniques used in this study. CBPAR and ethnographic qualitative research design were employed in this study through the application of qualitative interviews and the GIS techniques to reveal the complexities of the space and place on aging well in place among Métis older adults in Île-à-la-Crosse. Interviews and field notes were transcribed and analyzed using deductive and inductive analytic strategies. The themes obtained from the analysis were used to describe the perspectives of participants. Further, GIS application was used to analyzed places of attachment identified by the participants and to classify the landcover with the community. The information obtained was rich and detailed to describe the perceived influence of space and place on the health and wellness of Métis older adult participants. The next chapter outlines the results from the qualitative interviews and fieldnotes.

CHAPTER FIVE RESULTS: MÉTIS OLDER ADULTS' PERSPECTIVES ON THEIR LAND, HEALTH, AND WELLBEING

This chapter provides detailed results from the semi-structured and spatial interviews and field notes data analysis. The data analysis revealed four main themes related to Métis older adults' perspectives regarding the land, sense of belonging, health, and wellbeing. These themes included (1) *Wuskiywiy-tan!* Let's Move!: Staying busy, Staying active; (2) The land connects and enriches us; (3) Tensions in our relationship with the land; and (4) We are Métis, We are the land, We are resilient.

5.1 *Wuskiywiy-tan!* Let's Move!: Staying Busy, Staying Active

The interviews revealed key insights into older adults' perceptions of how the community and the surrounding lands contribute to staying busy and staying active. Participants described diverse reasons for being active on the land, including procuring food, playing traditional games, and maintaining a connection to lands that hold memories of the past. Participants described how land-based activities are of greater importance and priority for maintaining physical fitness than attending a gymnasium or other such Western-based physical activities.

Many of the participants described being active with land-based practices. They talked about how they were always "on the go" with the zeal to be out there every day. In many instances, participants connected "being physically active" to "being culturally and traditionally active." Food gathering practices such as fishing, trapping, hunting, and picking local foods and medicine were identified as important land-based traditional practices to stay busy and active. These practices require a lot of physical strength and endurance (Pace, 2020). Some of the participants described how these activities ensured physical activity and fitness in the past.

> Traditionally, we were active people because of our land. We had to go hunting for our food, you know, you had to move around. (Male, 70 years)

> I remember we were always busy. Everything that I did with my parents on the land made me physically active. You were either on the lake fishing or on the land working hard to bring food home. We hardly had time to think of other things. (Male, 74 years)

Other participants described Métis land-based activities as "what they grew up doing." Working hard and staying active was what was expected of them, and they enjoyed being part of the work their parents and grandparents did.

> Yes, I remember vividly. It's just the way we grew up. … People my age, we grew up on the land. (Female, 72 years)

> Growing up, life on the trapline, oh, it was enjoyable. We were expected to follow our parents to these traplines. Even though it was hard work, it kept us busy all the time. (Male, 68 years)

Participants identified walking as the main movement (physical activity) they engaged in when they were on the land. Many noted that walking was just part of what was needed to be able to procure food from the land and that physical activity wasn't something that people necessarily set out to do. Instead, it would naturally happen while living off the land. This became clear as participants described the activity levels required to engage in land-based activities such as snaring, hunting, fishing, trapping, and berry picking. Movement that supported physical fitness was just part of maintaining a healthy diet.

> I could walk for miles from my cabin and back hunting and snaring. I will say about 6–7 kilometres or more. It has to be longer because you walk all day. It made us physically active. (Male, 69 years)

> In the past, sometimes, I leave at 8:30 in the morning to be on the land. I don't come back until 7 or 8o'clock in the night. I walk all day hunting for moose, setting traps, and snaring rabbits. (Male, 90 years)

> It's was a busy and active life out there. I remember on my trap-line. …Oh boy, I could walk for 8 to 20 miles checking my traps. I can say that my life on the trapline was better and healthier. (Male, 78 years)

Even in their older adulthood, many participants acknowledged that they still maintain their physical activity levels on the land. Participants mentioned many land-based activities, including fishing, hunting, skinning animals, tanning hide, trapping, berry picking, and hauling of wood as some of the activities they still engage in to stay physically active and mobile.

> I berry pick a lot in the bush. …You know, I cannot walk very well, but I berry pick every summer. It's much work, and you sweat. (Female, 84 years)
>
> I haul wood with my son during springtime. …Once the winter is over, we have to get ready for another one. That's a good exercise to stay active and strong. (Male, 70 years)

Gendered roles of harvesting still exist in the community in Île-à-la-Crosse. Gender differences were apparent in terms of land-based activities that participants engage in. Descriptions of land-based activities, including berry picking and skinning and tanning of hides, were common among female participants. In comparison, the men described that they were more likely to engage in skinning, tanning of hides, hauling of wood, trapping, hunting, and fishing. Similarly, a study by Fuentes, Asselin, Bélisle, and Labra (2020) reported that gender is essential for understanding health and wellness across the life course for Indigenous people. Macdougall (2017a) argued that Métis identity is strongly influenced by various cultural activities and practices that community members participate in while living both on and off the land. The author observed that both men and women engage in different socio-cultural roles and behaviours in their communities, impacting their health outcomes. These same differences in Île-à-la-Crosse may be reflected in the participation of land-based activities.

> At Cole Bay, I will be at the cabin skinning and smoking the animal while the children and their dad will be out there hunting and trapping. I also tan the hides. I use them for moccasins and gloves…good for the cold weather. When there no animals to work on, I berry pick in the yard or bead for my moccasins. (Female, 66 years)
>
> I didn't haul wood for the winter. I was sick. I felt very bad that I couldn't do it myself. (Male, 62 years)
>
> Traditional gender role differentiation emerged in sharp focus when I travelled on the land with Elders J and E along with other community members to Pine house for two days. Although less noticeable and mostly ignored within the community. Gender roles were focused on cooperation to procure food from the land. (Field notes, June 3, 2018)

In addition, these comments and observations indicate that although different activities are done specifically by men and women on the land, the overall intent was to ensure that the various land-based activities were shared and coordinated between men and women. In many instances,

women were seen to get involved in many of the physically arduous land-based activities as needed.

Being active and busy was not only about traditional food gathering practices, but was also about entertainment and engaging in culture-based activities by participating in "traditional games" and competitions. Many of these types of activities (axe throwing, fish filleting, moose hide preparation, among others) still take place among Indigenous older adults, such as during the annual Elders' gathering[19] in Patuanak.[20] It became clear that participants described that staying entertained also meant being active and moving, which is quite different from what young people do as entertainment today.

> I participate in games. … Like the Elders' canoe competition, I enjoy paddling, and sometimes we have a race here on the lake. It usually involves two Elders racing to that end and coming back here. People will be waiting for the first person to come in, so the competition is keen, but it makes us active. … Our health and all that. (Male, 69 years)

> There is everything; we do all kinds of games to entertain ourselves. In the winter, we clear out the ice here and make a fire, and we do all kinds of things, you know. …snowshoeing and broomball. We have all kinds of games, such as axe throwing. It's just not short of anything. (Female, 67 years)

The maintenance of connections with the lands, which hold memories of the past and connection to Métis culture, was identified as contributing to the movement (and physical fitness) of participants. Some of the participants mentioned old traplines, homesteads, and cabins as examples of places that still hold memories of the past for them. These places supported participants to stay active. For instance, many participants today favoured having more than one cabin to mirror their past lifestyle when they followed the animals and to allow for different seasonal activities that keep them active. The participants shared how trips to the cabin support them to maintain their physical activity levels.

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[19] This gathering is aimed at bringing Elders from the region together to intermingle with their peers and their families. It also offers them the opportunity to connect with the younger generation.

[20] Patuanak is located north of Île-à-la-Crosse and closer to the north end of the Churchill River.

> As Métis, *wuskiwiy* [movement] is in our blood. You know, we don't like being restricted to just one place. A healthy life is having cabins on the land so that you are always on the move. It's an active lifestyle. (Female, 69 years)

> I keep myself active by going to my cabins. This is where I remain connected to our traditional activities. I can hunt, trap and prepare dry meat for my family. This was our life in the past, and it kept us healthy. I feel useless, sitting at home doing nothing. (Male, 71 years)

Participants emphasized the importance and priority of being active on the land. Few participants described engaging in physical activity programming that is based at the gym or on Western-based physical activity programs. Many participants described feeling more comfortable when on the land, in spaces and places that connected them with their cultural practices and their past. Métis land-based activities were described as different from other forms of physical activities in the community because they were often connected with practical outcomes, such as setting a net for catching fish. Participants mentioned that they feel more comfortable staying active in their own cultural spaces.

> Well, I prefer to stay active on the land than to go to the gym or stay indoor on [the] walking track. I feel comfortable outside, where I can enjoy the fresh air from nature. It's natural. … It's open out there. … You don't have to be restricted to be physically active. (Female, 66 years)

> Being out there on the land is good to stay physically active. Sometimes I paddle on the lake to set my net and check it the next day. You don't see it to be a lot of work, but you burn calories doing that. Someone who went to the gym at the same time may not burn that many calories. (Male, 70 years)

Several participants discussed the times they stay busy and active. They noted that land-based activities change depending on the time of year and that there is always something to be done on the land regardless of what season it is. The land keeps them active all year round and, often, allows them to practice their Métis culture. This finding supports evidence from previous observations among Inuit in Canada (MacDonald, Willox, Ford, Shiwak, & Wood, 2015). Some of the comments around this centred on the seasonality of land-based activities.

> Our activities depend on the weather, you know. It depends on what time of the year and the activity you want to engage in. … Whether it's ice fishing, regular fishing, hunting and trapping. (Male, 65 years)

> All our land-based activities are planned by the season, and that is what we do here. … Like you can't go for berries in the winter. We pick berries from July to September. (Female, 63 years)

> We have times for fishing. … Summer fishing is from May to July. … Ice fishing is usually from December to sometime in April. (Male, 69 years)

Figure 5.1 depicts a summary of the timing of land-based activities and the times they take place in the year as described by the participants. It is interesting to note that while the land offers participants the opportunity to participate in these activities to stay active throughout the year, many of the activities have unique Métis cultural teachings. This presents older adults the opportunity to get their cultural teachings passed to the younger generation in the community throughout the year.

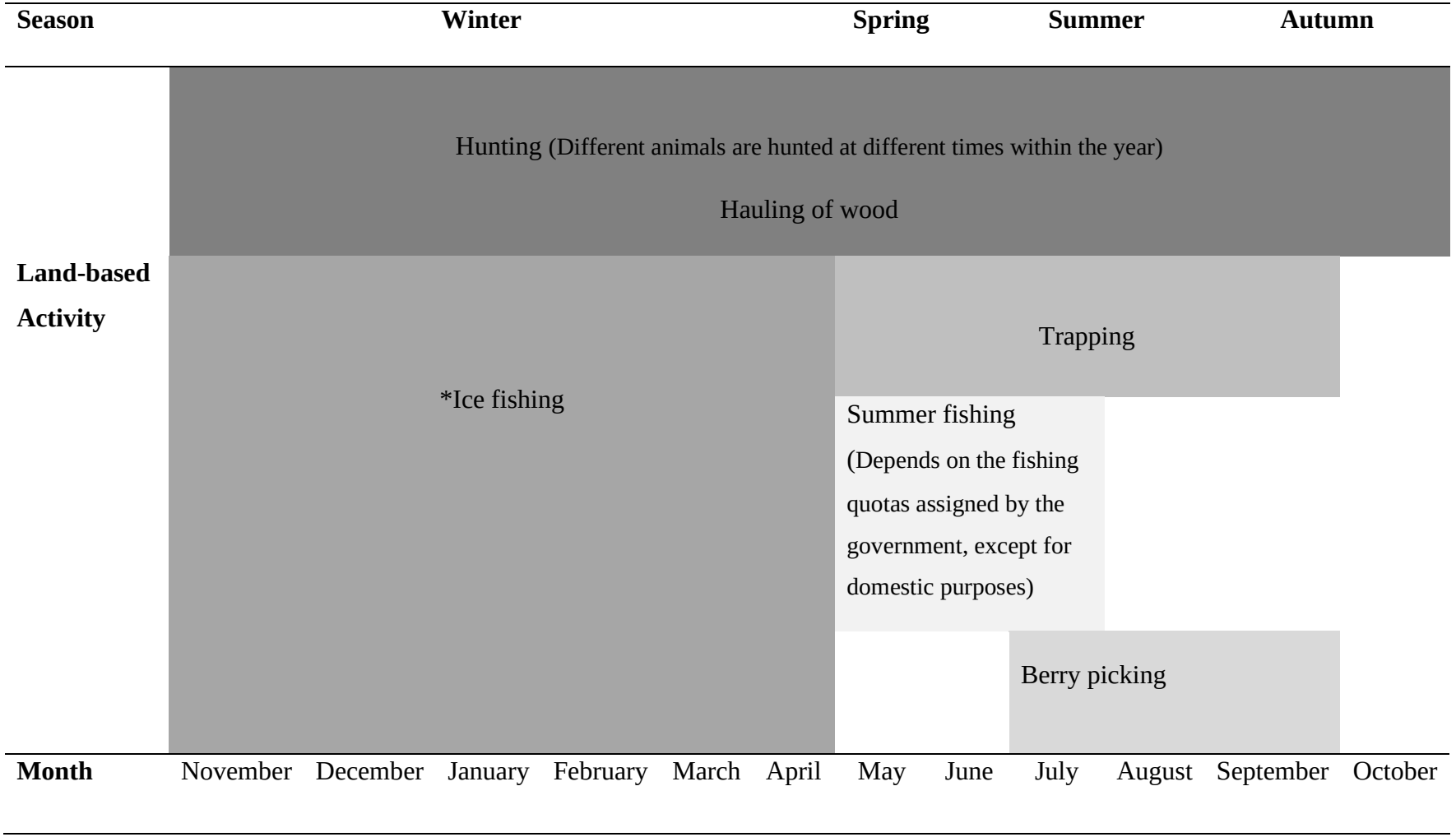

Figure 5.1. Timing of land-based activities in Île-à-la-Crosse

5.2 The Land Connects and Enriches Us

In this theme, the participants described how the community and the surrounding lands contribute to connecting and enriching them. The findings revealed a myriad of ways through which the land connects and enriches Métis older adults, including social connection with the community and the land, connection to the Creator and ancestral spirits, the importance of passing on teachings to the younger generation, sense of emotional satisfaction, and developing a sense of peace and solitude.

The land was described by participants as a stimulus to engaging with friends, family, and other creatures. Socializing while on the land added to the quality of life and the importance of connection for Métis older adult participants. They described how land-based activities such as hunting, trapping, and berry picking keeps them connected to people.

> When we are out there on your trapline, we meet other people. I think it is a way for us to get together. (Male, 56 years)

> I go out to hunt with my friends … We go as a group and support each other. We share many stories out there because back in the community, it's like everyone is doing different things. The land is all about *pimatisiwin* [good life]. (Male, 69 years)

The connection to people occurred not only through land-based practices aimed at procuring food but also through their participation in social activities organized on the land such as local fish derbies, family camps, and trips to their cabins. Many of these activities bring families and other community members together at various places in the community.

> I go to fish derbies because I want to meet people. It's the most enjoyable thing. … Really meeting people you've not met for some time and being with them. (Female, 62 years)

> I participate in the family camp every year. I usually go for a sleepover in my tent. It's a way of connecting to community members, especially those I haven't see in a long time. (Female, 55 years)

> As a family, we get together in my cabin, which is not too far away. Sometimes, we get together for some of the long weekends, not necessarily for any reason, but for a feast. It's an opportunity to make plans for the future. (Male, 70 years)

The traditional practice of food sharing was also highlighted as a way participants connected with the land and with one another. Traditionally, people would share and trade food procured from the land with their families and community.

> When my grandpa had a "kill" [game from the bush], neighbours would come in, and they'd bring us something like a bannock in exchange for meat. That's how life was here; It [food sharing] brought us together as people and ensured that every family has something to feed on. (Female, 72 years)

> Yeah, growing up, we bartered and shared everything. I remember that whenever my Dad killed a moose, we cut them up and share[d]. It ensured that every family has something to feed on. (Male, 74 years)

Over time the practice of food sharing declined in the community for complex reasons including, but not limited to, landscape changes (discussed in section 5.3). However, several participants mentioned that they desire to always share with other community members, particularly family members and Elders, who cannot access local foods as a means of fulfilling a cultural obligation. This practice points to the importance of family connections and helping one another as critical to maintaining health and wellness. These perspectives are captured in the following comments:

> These days, it is difficult to share because people think about the cost. However, I will say it [food sharing] is coming back gradually into the community. Some people are sharing what they obtain from the land. There are Elders and other family members who can't go out to get this local stuff [local food], so I share with them. Our culture demands that we do that, you know. (Male, 55 years)

> Yes, when somebody has wild food, they come and give me; fish or bush meat. Most of the time, these people are my family members or people who see me as an Elder. It is a blessing to give to an Elder, you know. (Female, 84 years)

> These days, it is more of sharing with people in the community, especially the Elders. That's the Métis way of life … caring for one another. … You know, supporting one another so that no one goes hungry. (Male, 61 years)

These comments reveal how generations within the community are supporting one another to be well. These comments also indicate that food sharing is extremely valued not only because the participants attach value to the practice of eating local foods, but also as a way of preserving and sustaining social networks and kinship structures that exist in the community, all of which nurture wholistic health, wellness, and aging well in place. In accordance with the present results, previous studies have demonstrated the importance of food sharing in maintaining kinship structures and social connections (Abu & Reed, 2018; Loring & Gerlach, 2009).

Apart from connecting to people, participants acknowledged the deep-seated connections they have with animals and plants on the land. For instance, most Métis older adults reported spending time with animals for companionship. According to the participants, practices and behaviours such as feeding and talking to animals give them a feeling of connectedness.

> Lately, when I am out there, and I see a bird or an animal or something, I will stop and talk to them and may be feed them. I will say, how are you doing over there? It's like I'm having a little conversation with this animal. It connects me to nature. (Female, 67 years)

> In September, the elk and the moose would start calling … I think around 5th to 10th … they make beautiful noises. … It's beautiful standing on the road listening to those animals calling. Sometimes we will call them back, and they will respond to the call. (Male, 70 years)

The land was also described as a setting where older adults connect spiritually. Participants mentioned that they use the land to connect to their Creator and ancestral spirits. Participating in land-based activities such as hunting, fishing, and picking traditional food and medicine, were examples of how participants derived spiritual connections while on the land. In many instances, these spiritual connections will occur naturally while participating in these activities.

> When you are all alone hunting or trapping, you know that it's you and your Creator. You always ask for help. You always talk to your Creator. I feel like … I don't know … a spiritual connection there. (Male, 68 years)

> We will go into the bush to pick berries- raspberries, strawberries, cranberries, and blueberries. It's very meditative, just sitting there and picking your berries. I feel like … a spiritual connection in the bush. (Female, 63 years)

> When you take something from the land, you have to give thanks. I offer tobacco every time I take something from the land. … Plus, it's spiritual too. It's like communicating with the spirits to say thank you. When you do that, the land will give you more next time. (Male 70 years)

Métis older adults value and respect the land as a way to maintain a connection to their past, to create a sustainable future for younger generations, and to live a healthy lifestyle. They feel responsible to share their knowledge (informed by their ancestors and experience on the land) with the younger generations. For example, participants talked about being connected to the land and knowing when they should hunt, trap, and fish based on respecting the life cycles of the animals and plants around them to ensure their wholistic health and wellness. It became apparent that this knowledge that is meant to be passed to younger generations is critical for the sustainability of animals, plants, and the land over time.

> You see, the moose population continues to reduce. As hunters, we have resolved not to hunt animals with young ones. Like when we hunt in the fall, we target bull moose, we call it a dry cow. …You make sure she hasn't got a little one running around. As older people will recognize what a dry cow looks like. Our ability to do this means that we are conserving rather contributing to the ongoing wildlife changes. (Male, 69 years)

> Yes, trapping, I didn't do too much. I didn't want to trap the ones that were starting to come back, eh, because I know I need to leave them alone so they can repopulate there. So, I had to pull out early. I didn't want to trap them. After repopulating, we can trap again. … It is also the children you know, conserving for the future that is what it is. (Male, 68 years)

These comments indicate that older adults are feeling a sense of responsibility for protecting the land so that it can enrich and replenish itself for the maintenance of their connection to the land as well as preserving the land for future generations. It also reveals that as a community, they don't need the government to tell them when they should engage in land-based activities (as described in Section 5.4).

Spirituality was found to be inextricably associated with sacred places on the land, including locations of medicines, burial grounds of ancestors, ceremonial sites, and places they once lived. These sites were perceived as the abodes of ancestral spirits and the Creator, and as

places of contact and communicating with unseen beings. On many occasions, participants discussed how they feel connected spiritually to their Creator and ancestral spirits by spending time at these sacred places.

> If I go out there, I can sense the spirits of the people who are gone and the Creator. … So, for me being on the land generates thoughts that I naturally wouldn't have at all and changes my perspective on many things, and my spirit is being fed, which creates more energy both ways. (Female, 72 years)

> Being here [on the land] is a different feeling. I always remember what I did with my *kookum* [grandmother] and *mooshum* [grandfather]. I can always feel their presence in my spirits. This is how my grandparents used to live. … It's good to still connect with them by doing those things. It gives me positive energy. … Energy to interact better with the kids and the youth here [community]. (Male, 78 years)

The value older adults get from passing their knowledge and skills to the younger generation was mentioned as another form of Métis spirituality. Participating in land-based activities and spending time on the land with the younger generation were mentioned as some of the ways through which Métis teachings are passed on. Métis older adults described Métis Traditional Knowledge as "spirit and gift" passed on through and by Métis people. For some of the participants, this spirituality is an important way of maintaining the survival of their culture, where passing on teachings supports cultural continuity across the generations.

> Our traditional knowledge is spirit, so we must pass it on. We always spend time in the cabin. There are no distractions, so the kids can concentrate when you are teaching them. (Male, 74 years)

> Of course, I have to pass it on. That's why my grandfather gave me this knowledge. … knowing that this culture will survive the next generation when I am long gone is food to my soul. … You know it enriches the soul. (Male, 70 years)

Participants identified improvement in their emotional health by spending time on the land as another way through which the land enriches their soul. In discussing this, participants emphasized the sense of emotional satisfaction they derived from participating in land-based activities or being closer to the land. Participants described the emotional benefits they derive

from engaging in land-based activities by using words such as “self-worth,” “whole,” “fulfilled,” and “complete,” as depicted in the quotes below:

> The land provides me with a sense of self-worth and value. … Whenever I have a kill out there and knowing that I can feed my family. I mean, you become pleased with yourself. (Male, 62 years)

> Whenever I get into that bush to pick berries, it’s like stepping into another world. You can feel the wholeness within you. (Female, 69 years)

The sense of peace and solitude experienced by participants when they are on the land was mentioned as vital to their wholistic health and wellbeing. This was particularly evident by participants using words such as “peaceful,” “calming,” and “rejuvenating” in describing their experiences on the land. The following quotes capture these concepts:

> I like it over there [the bush]. It’s nice and quiet. You know it’s beautiful, no stress, no phone to ring, nothing. Just peaceful and rejuvenating. … You feel at peace with yourself. (Male 65 years)

> Well, it’s peaceful, it’s very calming out there. It’s like all your worries just go away. … Kind of brings you back, like, reminiscing about things in the past. (Male, 71 years)

Peace and solitude were also achieved by certain participants when they spend time alone in the calm and quiet bush, away from the daily stressors and demands of life. The bush has become “a means of getting away from daily life stress.” For these participants, when things get stressful, they spend time on the land to engage in a land-based traditional activity or to sit somewhere in the bush, to feel more grounded and calm.

> Whenever I feel like I’m getting stressed, I go out to pick berries or traditional medicine. I get time for myself when I do that, you know. I come back home, refreshed. (Male, 68 years)

> It’s nice and quiet, you know, you’re by yourself. It’s nice and quiet. You don’t hear people, and you don’t hear vehicles. Sometimes it’s loud in the community. You don’t have that when you’re out on the land. (Male, 70 years)

Along these same lines of seeking and achieving peace while in nature, several participants described feeling more clear and cognitively aware after spending time on the land.

Older adults discussed improvements in their cognitive health in terms of mental stimulation and memory. Participants used phrases such as “ability to think clearly” and “good memory” when they are on the land. This finding also backs the existing body of knowledge from other parts of Canada where the land was found contributing to cognitive health (Pace, 2020; Willox, Harper, Edge, et al., 2013). Participation in land-based activities involves thinking and constantly making decisions. Participants highlighted having sharper minds and the ability to remember past events as evidence of how the land contributes to their cognitive health.

> It gives you the power of being able to think clearly, no fog. The land gives you the peace for a mind that is sharper. (Male, 71 years)

> There are some problems you can’t solve by just sitting in your house. You must go to the land. It’s peaceful. …you can think clearly with no disturbance.” What is amazing is my brain power when I am out there. … My mind is at peace so that I can remember so many things from the past. … Like plant names and many things. (Male, 74 years)

This section has shown that time spent on or closer to the land in and around the community contributes to social connection with the community and the land, connection to unseen beings, passing on knowledge to the younger generation, developing a sense of emotional satisfaction, and a sense of peace. These were found to be contributing to their sense of belonging, health, and wellness. However, the results from the interview data also revealed stressors that impede Métis older adults’ relationship with their land. The next section presents the stressors identified by participants.

5.3 Tensions in Our Relationship with the Land

The interviews and the field notes revealed Métis older adults’ perceptions of barriers that impede their relationships with the community and surrounding lands and the ways they work around these barriers. The findings revealed three sub-themes: (5.3.1) Human disturbances to the land; (5.3.2) Observed changes occurring to our land; and (5.3.3) Places, spaces, and colonization.

5.3.1 Human disturbances to the land. Participants identified human disturbances occurring on the land. These factors were linked to anthropogenic activities.[21] Some of the factors, which are clearly linked to the human impact of industrial, recreational, and economic-driven priorities, identified by participants include climate variability, forest fires, clear-cutting/logging, road construction, and skidoos and quads.

Climate variability is an important factor influencing participants' relationship with the land and their ability to access it for their wholistic health and wellness. This study supports evidence from previous observations in other Indigenous communities that found climatic changes to be negatively impacting community members' interaction with their land (Turner & Clifton, 2009; Willox, Harper, Ford, et al., 2013; Willox et al., 2012). Several participants mentioned significant variability and inconsistent changes to the climatic conditions in the area. These changes are in contrast with seasonal climatic conditions experienced in the past and were suggested to be linked to human behaviour. Because of a strong connection and dependence on the land in all seasons, participants were aware most of the time what to expect. However, participants see this differently today.

> I'm at the point where if it rains too much, I become a bit nervous. I mean, it's weird, but with all these strong winds uprooting trees … You can't predict what can happen to you if you are out there. (Male, 55 years)

> Previously, you could tell when the snow will come in and when the lake will freeze up. … Not anymore because the weather keeps changing. These days the snow comes in late. Sometimes there are cracks all over the lake during wintertime. It affects our activities on the land. That was certainly not the case in the past. (Male, 70 years)

The current changes in climatic and weather patterns occurring in the community and surrounding lands were attributed to deforestation as a result of human behaviour. Participants mentioned how human activities contribute to changes in local climatic conditions. For example, logging was described as a major cause of deforestation. This activity was deemed to be conducted in a way that is different from what participants know from the past, where people were selective in the types of trees that were cut. Today, they feel people cut trees indiscriminately with some clear-cutting activities going on in the community and surrounding

[21] These are activities that result from the influence human beings have on nature.

lands. As the forest cover continues to decrease, community members have increasingly been exposed to recurrent strong wind events and unreliable snow and rainfall, which prevent access to the land.

> One of the Elders also spoke about the activities of logging companies. “My friend, can you imagine that you own a land, you walk up one day, and there are people logging and doing all kinds of things on it because somebody's permitted it without you knowing. You’re certainly going to experience a loss of that property.” He told me about how their trapping block has been affected by clear-cutting. He indicated that in Métis culture, it is not respectful to do that in the land. (Field notes, May 2, 2018)

> There are certain medicinal plants we try to avoid them because in the past, when you pick them, it would cause bad weather and heavy rain. These days, there is this talk about how the climate is changing. I think we cannot discount human actions. Look around us. We cut down trees indiscriminately. We didn’t do this in the past. In the past, we carefully select the trees we needed. What will serve as the windshield when it rains? So you see, as humans, most of us are contributing so much to the climatic anomalies. (Male, 69 years)

> My grandparents told me that there are flowers when you pick them; it changes the weather condition. The pattern [weather pattern] we see today is different. … It’s due to our actions. … Trees are life. When they are cut, it affects the weather. I always say to people that don’t destroy things on the land that are irreplaceable because they affect the climate. (Female, 67 years)

> I feel that there are variations in the snowfall and rainfall. It is happening because of deforestation. When I compare present climatic events in this area to the past when we had the good forest, I will say we had good rains and snow throughout the year. … Better than what we see now. (Male, 90 years)

Building on this, how forests are managed, and road construction is supported were discussed as barriers to participants’ relationship with the land. These factors affected participants’ ability to access the land and engage in land-based activities that provide an emotional and spiritual connection for Métis older adults (as described in section 5.2). Participants mentioned the frequency of forest fires in and around the community where the

forest is left to burn with high intensity destroying everything in its way. Some of the participants mentioned situations where they were told to "let it burn."

> So our forest keeps burning year after year with such intensity. Sometimes the firefighters will tell us it [the fire] is not near the community, so they leave it to burn. … And the clear-cutting renders the land bare. It affects everything we do out there, including our stay in the community. (Male, 62)

> It is very difficult to control the fire. When it comes this way, it burns all the things. Everything goes up in smoke. (Male, 69 years)

Current fire management practices in Canada include a range of practices, from complete extinguishment to a stage of "let it burn" where no intervention is applied, except for situations where it threatens communities (Asfaw, Sandy Lake First Nation, McGee, & Christianson, 2019; Tymstra, Stocks, Cai, & Flannigan, 2020).

Road construction featured prominently in the discussions around older adults' relationship with the land. Participants discussed the benefits of the highway leading into the community, including easy access to other communities, access to services, and economic opportunities. Despite these benefits, perceptions of the existing road raise new challenges that put their cultural practices informing their health and wellness at risk. For example, participants mentioned access to market foods instead of relying on locally procured foods, which also changed the need to be on the land.

> I can go there [cabin] if I want to, but the key thing about going to the place is to try and stay away as much as I can. Once they constructed the road, people started going there. Whatever we have there to enjoy are [sic] all gone. It has become easier to go there. … A bunch of hunters from other places have been going in. … I think they are over-harvesting. (Male, 69 years)

> And you cannot discount the road that leads into the community. It has exposed us to all kinds of things. I mean, don't get me wrong, it [the road] has helped this community in many ways. However, we have more food [processed foods] coming to the store, more alcohol, you know. It easy to access the food at the store, so some people prefer that. … Out there, you have to sweat for it. (Female, 72 years)

These comments indicate that road construction brought changes to how community members acquired food. The road was also perceived as a threat to wildlife and facilitated access by poachers to traditional hunting grounds. Road construction, along with other human disturbances, was identified as the cause of the observed changes in vegetation, wildlife, and water in the community and surrounding lands. These were also found to be impacting negatively on the health and wellness of participants, as described in the next theme.

5.3.2 Observed changes occurring to our land. Participants noticed some changes to the land due to actions that are not aligned with their own Métis ways of doing and knowing. Several changes occurring to the land were observed by participants over their lifetime in the community, including changes in vegetation, changes in the quality and quantity of water in the lake, and wildlife changes. Similar findings have been reported in a study with the Cree Nation of Cumberland House in Saskatchewan (Abu, Reed, & Jardine, 2019). Participants gave different accounts on why they believed the vegetation, such as berries and medicinal plants growing in and around the community, was changing. For example, wild berry growth and berry picking locations changed as a result of deforestation and forest fires, thus affecting access to berries and berry picking practices.

> We are losing many of our medicinal plants. I was picking medicine around the community. Today, I realized I go far away from the community. It's not growing around the community anymore. (Male, 68 years)

> Peviously, we used to get good berries right outside my house here in the community. Sometimes we walked for 5 to 6 minutes into the bush, and we use to pick pails of berries. You see berries right off a cliff like this. That's how they were before. (Female, 63 years)

Métis older adult participants view water as the giver of life; without it, the life on Mother Earth will die. They spent a lot of time talking about the quality and quantity (different levels) of water in the lake and water that surrounds the community. Participants felt that the quality of the water was symbolic of their community's health. In sharing the past, participants talked about how the water levels in the lake were good, the flow steady and clean. Most of the participants felt that today there is a reduction in water quality and quantity of water in the lake and that this, in turn, negatively affects all the animals, plants, and community members' health.

One of the key criteria for determining the quality of water in the lake was its drinkability and that many community members feel that the water is no longer drinkable. This is a big concern among Métis older adults.

> Is our lake gradually losing it's worth? Sometimes I think about it. Some time ago, you could see the bottom of the water in the lake maybe 20 feet away from the shore, and everything was sparkling and clean. You couldn't stop drinking the water. Now with all these changes [disturbances] occurring, it is not like it used to be. It's dirty and making us sick. (Male, 74 years)

> We were healthy, we drank from the lake, but not anymore. You'll be sick if you do. It may be due to a lot of oil being drilled upstream, especially in Alberta. The Churchill River flows from Alberta, and that water came down this way. (Male, 69 years)

> People do not realize it when they are using their skidoos and quads on the lake during winter time. … The pollution it leaves on the snow, they forget that it goes directly into the lake. It has contributed to the pollution of the lake. We can't drink that. (Female, 56 years)

Participants also commented on changes in the quantity or volume of water in the lake. They commented on extreme fluctuations in water levels, sometimes occurring on a seasonal basis, which is different from the past. Almost all the people pointed to the water level as a big issue in the community, which has an adverse impact on all forms of life in the community.

> The water level [in the lake] seems to be coming up higher every year. Last year it was high. We had to build dykes because the water was coming right into the community. It destroyed a lot of wild rice and the sage. Not so much this year. The ice hasn't melted yet. You never know what it's going to be like. (Male, 61 years)

> After the forest fires some years back, the water in the lake went way down. … And the place was dry such that you could walk across. Before the fires, we used to hunt muskrats and fish there. I remember there northern pike and pickerel [type of fish]. After the fires, we barely found a muskrat and fish there. … The impact on our activities is obvious, you know. (Male, 71 years)

Wildlife populations and migration patterns were noted to have changed as deforestation and pollution led to habitat destruction and loss. The impact of these human-related activities has led to a decline in the number of wildlife species being seen in and around the community. Unfortunately, these changes have had a negative impact on community members being able to engage in hunting, fishing, and trapping, negatively influencing their ability to engage in their Métis culture, traditions, and practices that are critical to their wholistic wellness. Also, the change means that sources of their traditional food have changed which challenges their ability to maintain optimum health and wellness through procuring local foods.

> Our animals have gone down south. I heard on the news that there was a loose moose in Saskatoon. I don't think it's the first time either. I don't remember hearing of a loose moose in any of our northern communities. We are gradually losing a local delicacy. … That's an impact on our health right there. (Male, 78 years)

> The biggest spawning area for northern pike and whitefish was at that area closer to Sandy Point, but that isn't the case anymore. It's not as rich as it used to be. We used to get big white fish from the lake. That's not the case today. These days if you are lucky, you will get those. (Male, 69 years)

> I've started seeing some fish with some lumps like they have lumps on the side. Sometimes we will catch some fish; they only have three fins. … Some of them will have missing fins, or some will have no back fins and stuff like that. (Female, 62 years)

These comments indicate that the wildlife population in the community and surrounding lands were observed by participants to be different than what they had observed in the past. Participants recalled the plentiful and diverse wildlife species that were present in and around the community when they were younger, many of which are not present or visible in the same way today. These changes were attributed to deforestation and pollution at the hands of industry and economy and done in ways that are not aligned with the way in which the Métis people would have chosen to do things.

As changes take place on the landscape, affecting the quality and quantity of wildlife and plants, participants described losing their ability to access and obtain local and traditional food. In turn, they noted that community members are increasingly reliant on store-bought market foods that have lower nutritional and cultural value.

> The change is not helping … It is difficult to get a kill when we go out hunting. Some people can go about two years or more without killing moose or caribou, so what do they have to do? Of course, rely on store-bought foods. (Male, 71 years)
>
> Most of our local foods are scarce. … I don't recollect the last time I saw a pail of saskatoons [berries]. We buy our food from the store [grocery store] over there. (Female, 62 years)
>
> These [processed foods] contain many additives that are not good for our bodies. … There is no doubt that store-bought foods are not providing us with the required nutrients for our bodies. We are eating all kinds of chemicals into our bodies, and that is affecting us. (Female, 56 years)
>
> We were stronger when we ate from the land. There was no sickness. Food from the bush is not like the ones sold at the store. It didn't make us sick. All these processed foods are making us sick every day. (Male, 74 years)

Traditional land-based activities such as hunting, trapping, fishing, and picking plants and medicines are an integral and essential aspect of Métis knowledge systems and teach them who they are. Both Adelson (2000) and Rowe et al. (2020) explored the importance of traditional land-based activities for identity, concurring that land-based activities in Indigenous communities are fundamental to the identity of Indigenous People. The manner through which food is procured from the land is a vital means of supporting distinctive cultural characteristics. Thus, the loss of traditional modes of production threatens a vital experience through which culture can be passed on to the younger generation (Rowe et al., 2020). As the challenges to procuring local food exist, it is becoming more challenging for people to maintain their customs, practices, and pass on their teachings to the younger generation due to the limited opportunities to be on the land. Several participants discussed the loss of important plants and animals as impacting negatively on their knowledge systems.

> There is a sense of losing who we are. We are losing some of the plants and animals. I am afraid that a time will come when other generations will not know some of these important plants, animals, and our land-based practices, practices that are important in sharing our knowledge, sharing with others and connecting to our land … our identity will be gone. (Male, 68 years)

> I grew up hunting, trapping and fishing. Our ancestors were doing it. It's who we are in this community. Sometimes I feel that with all the changes occurring, we are going to lose these practices and places that are sacred. … gradually, it is becoming difficult to engage in some of the practices. (Male, 70 years)
>
> The ability to hunt, trap, and fish is part of being a Métis. It's our culture. The Elders will tell you that. Those are the practices we are losing to the changes. … It's becoming difficult to get the local food; some people in the community are selling food obtained from the land without sharing. … Sharing of food is important in our culture. That's not being Métis. That's not who we are. (Male 78 years)

These comments indicate that land-based activities contribute to the identity of Métis and afford them the opportunity for sharing moral and social values, and for practicing and learning Métis culture. This includes cultural values and traditions that have both sustained and allowed Métis to stay well and healthy in their communities. These cultural values, which gave them a sense of pride and identity in the past, were noted to have changed over time as a result of landscape changes, thereby negatively impacting their general health and wellbeing.

5.3.3 Places, spaces, and colonization. Residential school experiences featured significantly in discussions in the childhood memories of older adults and their relationships with the land. Similarly, a study by Tobias and Richmond (2014) among the Pic River First Nation in Ontario reported that colonization led to the destruction of the long-standing relationship older people had with their traditional lands. The residential school experience appears to have had a significant effect on the time participants spent on the land to learn valuable Métis culture, traditions, and practices. The impact of this colonial practice has led to the marginalization and silencing of the Métis knowledge critical for the preservation of the land. The silencing of this knowledge has also prevented the passing down of essential knowledge and casts a shadow that extends to the generations that followed. Participants discussed the importance of reclaiming Métis identity, culture, and practices by learning land-based knowledge at a later age. This step is essential to re-establishing and strengthening Métis identity across the generations.

> Well, the residential school took me away from the land. I think it affected my relationship with the land … How do you teach people things you don't know? (Male, 62 years)

> It was not a pleasant experience at the residential school. … apart from the abuse, we were forbidden to practice anything Métis. … I mean, it took us away from the land. I lost precious time with the Elders on the land. … I am still learning how to hunt and trap. (Male, 65 years)

Apart from taking people away from the land, some participants referred to instances of various forms of abuse suffered at the residential school. Because of these bad experiences, they expressed fear of places linked to the school. Visiting places linked to the school became more difficult as they felt insecure and frightened, which impacted negatively on access to these places, as well as wholistic health and wellness.

> After spending so much time in the Residential school, in an atmosphere of fear. … Fear of caregivers. There is loneliness and dislike knowing that your family is not there. … Because of all the abuse suffered, I learned to hate myself. … All these memories move through my head when I am around. It's terrifying visiting this place [where the school once stood]. (Male, 69 years)

> I always have some fear when I go near, where the residential building stood. … I don't like going there. I don't like to see it and have memories of it. It gives me bad memories. (Female, 84 years)

> (She) mentioned to the poor treatment she received at the school and told me about her near-death experience at the school. She got hit and passed out. Her memories of that incident have been with her until today. She remembers the exact location at the residential school site where this occurred. "That was not a school; it was child labour and child abuse," she said during our conversation. (Field notes, April 18, 2018)

Governmental policies and regulations governing the land were discussed as forms of colonization, which still exist in the community today. For example, some conversations with participants were centred around the role of conservation officers and the need to obtain permits that "allow" Métis adults to engage in land-based activities. These factors were described as restrictive and impacted negatively on their ability to interact with their land in a meaningful and appropriate way. Preventing participants from accessing the land and engaging in land-based activities in meaningful ways disrupted the balance between the physical, social, emotional, and

spiritual spheres of health and wellness for Métis older adults (as described in Sections 5.1 and 5.2).

> Everything is formal now. … With all these government rules and regulations. You need a license to do almost everything on the land. … Like hunting and fishing. It's so irritating and restrictive. (Female, 72 years)

> Very soon they [conservation officers] will tell us that if you see a moose in the bush before you pull a trigger, ask the animal that 'hey moose, do you want to die'? These ridiculous policies and regulations continuously impact on our ability to use our land. (Male, 78 years)

> Conservation officers are everywhere checking us. They can even seize your gun when you are in the community. It happened to me. You cannot guarantee not meeting these wildlife enforcers when you are out there. These are gates around us. (Male, 69 years)

> He told me that one day they [conservation officers] would come into the community and tell us how to sleep in our homes. He told me about how these "ridiculous" policies and regulations are preventing them from living off the land successfully. (Field notes, April 28, 2018)

Most participants mentioned how the governmental control of access to resources on the land as well as restrictions on the access to places they consider a part of their traditional territories, including sacred sites, are negatively impacting their sense of identity and their ability to "be Métis."

> There are places that are important to our history, culture and heritage as a community. We can't access some of them. These places are part of who we are. … We're gradually losing our land and who we are to the government. It's sad. (Female, 72 years)

> There are places which have been taking away from us by the government. These places are part of identity as a people. … Part of our history. Wacask Bay has a graveyard situated across, which is important to us. … Part of Rosser Bay is a reserve with no access. These are healthy places we once lived. … It's part of our history. (Male, 68 years)

> We are not ghosts. Those are areas that identify us as a people. Why take it away from us as if we don't exist? People moved to different sites. Some of which were seasonal. It doesn't mean nobody lived there. … Restricting us from accessing these places is like taking away our identity. That is what the government is failing to understand. (Male, 78 years)

These comments reveal yet another way colonization continues to impact Métis identity with respect to land-based policies and restrictions that prevent older adults from accessing places that are beyond the governmental-defined boundaries of the community. These places have historically supported them to be well across generations, well before governmental boundaries were imposed (this is further discussed in Chapter 6). The comments also speak to the barriers to reclaim their traditional land and maintain Métis ways of doing and knowing, which is important for their health, wellbeing, and aging well in place. The land and relationship with the land are vital in supporting Métis older adults to be well and to age well in place. However, with colonized and racist governmental policies still in place, colonization continues to threaten aging well in the community.

As governmental policies continue to restrict the way participants want to live on the land, they experienced a decline in their mental health. For example, many participants mentioned not being able to travel on the land at certain times to practice their land-based activities as "sad," "angry," and "helpless." They also reported feeling frustrated and depressed to indicate how they perceive their state of mental wellbeing.

> I mean, it's a helpless situation we find ourselves in. … Conditions in the community are changing rapidly. Our main source of physical activity is the land. It is our normal pattern of life, and suddenly when you cannot do the activities that kept us active over the years because of these rules … You can't help than to sit at home. Being stuck in the community is depressing. (Male, 74 years)

> It is sometimes sad. You live an active life, and all of a sudden, you are forced to a different lifestyle because the government wants you to. Sometimes I sit here and angry at those guys [government]. It's stressful, to say the least. (Male, 62 years)

Additionally, when there are colonized governmental policies that are inequitable and imposed upon Métis populations, there is an increased risk for people to engage in behaviours

that are in response to this. For example, participants attributed some of the challenges with alcohol and addictions in the community to governmental policies and regulations that restrict where and when people can engage in land-based activities.

> I mean, when you are restricted in the community for a long time with no activity to engage in, there is always the temptation. You are likely to be out there drinking and doing all sorts of things which are bad for your health. We never did this when in the past, because the land was there for us. (Male, 78 years)

> Increasingly, we are losing our activities on the land. Many people of my age have nowhere to go. They are restricted. … No activity. That might explain why those people drink that much. I mean, it's a problem. We need our land to stop this behaviour. (Male, 68 years)

These comments indicate that as Métis older adults reflect when people are not able to access the land to practice the traditional activities that contribute to their wholistic health and wellness, there is increased risk-seeking behaviours that impact negatively on their health. Without these ongoing colonial practices, people will have access to the land and these health issues could be avoided to ensure the health and wellbeing of participants. While participants acknowledged that the landscape changes were causing diverse emotional and mental health impacts, they demonstrated that they had found creative and innovative approaches to deal with these changes. These are discussed in the next theme.

5.4 We Are Métis, We Are the Land, We Are Resilient

The interviews revealed that, while negative changes to the land were found to be impacting the wholistic health and wellbeing of the participants, Métis older adult participants demonstrated their strength and flexibility by developing different approaches to deal with the changes occurring on their land to ensure health and wellbeing. This finding revealed three sub-themes: (5.4.1) Teaching on the land: Snaring rabbits, setting the net; (5.4.2) Respecting seasonal changes, "It's for my safety"; and (5.4.3) Walking is what keeps me active.

5.4.1 Teaching on the land: Snaring rabbits, setting the net. The importance of Métis cultural practices to health and wellbeing was emphasized as critical to aging well in place. Therefore, any disruptions in their culture impact negatively. Participants shared approaches they are using

to maintain cultural continuity, including approaches to transmit their knowledge to the younger generation through "teaching survival skills" and approaches to reclaim past traditional practices and cultural values.

Participants identified some approaches used in the community that encourage the teaching and learning of survival skills such as setting net and traps, making fire, filleting fish, and skinning animals, among others. Several individuals shared the importance of cultural camp, wilderness camp, and cultural week as the means through which survival skills are passed to the younger generation. Many of them reflected on how they learned these skills by following their parents and grandparents. However, since it is becoming challenging to be on the land regularly to participate in land-based activities (as highlighted in section 5.3), they depend on cultural camp, wilderness camp, and cultural week to teach the children and the youth survival skills.

> It's not like in the 60s where we followed my grandparents. … The Elders will tell you about *ahkamîwowin* [perseverance]. We can persevere. … That's why we use cultural camp and cultural week to teach the kids. I use the survival school [cultural camp] to teach the children. Sometimes we take the boys to set the net and check it, bring back the fish, and then we will show them how to filet. We skin animals too. The kids love it because we've made it a part of their school activities. (Male, 74 years)

> I help at the elementary school to organize cultural and wilderness camps. We teach the kids how to survive on the land. It's a good way of teaching how life out there is like. … Basic things such as skinning animals, snaring rabbits, setting net and filleting fish. It is not like in the past where we learnt everything on the land. I combine both teachings on the land and the activities at the elementary school. (Female, 66 years)

Teaching survival skills and sharing their knowledge with the younger generations while participating in cultural camps, wilderness camps, and cultural week celebrations were discussed as a key to their health and wellbeing. Participants believed that by passing on their knowledge to the younger generation through stories, their knowledge would survive into the future, which added to their quality of life because they were able to fulfil the purpose of inheriting the knowledge from the past generation. As well, participation in these activities was described as contributing to the physical health of participants by providing an opportunity for them to stay active.

> The knowledge is not for us to keep. I share with the kids by going to the cultural week to talk to the kids. One day they will also pass it on. … Our culture will survive that way. (Male, 69 years)
>
> We use the camps and the cultural week to share our understanding of traditional knowledge to the children. It is my responsibility to share this knowledge with the kids. … So I don't die with the knowledge and stories my grandparents told me. (Male 69 years)
>
> I volunteer at cultural camps at the school. I keep myself active with that. I think children are also healthy too. We teach them [about] our culture. That's a healthy way of living. The kids are full of energy, so it makes me active when I am with them at the cultural camp. … You see it goes in both directions. (Female, 62 years)

These comments support the importance of maintaining Métis cultural practices for the health and wellbeing of older adults. They also reveal the importance of teaching survival skills to the health and wellbeing of the younger generation. In fact, Jennings, Johnson-Jennings, and Little (2020) and Rowe et al. (2020) report that the transmission of knowledge is associated with health and wellness in Indigenous communities. These comments are examples of the vital role interconnections between the younger and older generations can play to support the health and wellbeing of both generations, which is aligned with the BOL theory (Blackstock, 2007) (further expanded on in the discussion in Chapter 7).

Although participants spoke about the various landscape changes that have impacted their ability to access the land and engage in traditional land-based activities, they also described ways in which they continue to overcome such challenges. Some participants discussed ways they are reclaiming past practices of community gardening as ways to spend time on the land. This study found two types of community gardens in Île-à-la-Crosse — personal gardens in yards or on community allocated plots and a market garden, which is managed by Sakitawak Development Corporation. The market garden brings the community together by selling fresh produce once per week during the summer. In discussing community gardening, participants mentioned how, in the past, most homes had a backyard garden. Over time the practice of gardening has declined in the community. However, today, community gardening is regaining its place in the community. Métis participants saw the community garden as an important cultural practice that needs to

continue to be reclaimed and passed on.

> Well, the practice of gardening was dying, you know. People didn't plant their gardens anymore. … Now we are trying to pick it [community garden] up. Gardening is a way of life. … It's a way of connecting to our heritage. I grew up with vegetables and medicinal gardens. … So I'm going back to reclaim that. Hopefully, these kids will pass it on. (Female, 72 years)

> I have gone back to gardening. A lot of the people in the community are doing the same, you know. The community has a garden plot for people. I see it [community gardening] as one of the ways we're using to bring back what people did in the past. The gardening stuff means going back to some of the things that made us unique. … Our past practices and traditions. We need to bring it back so that it can be continued. (Male 70 years)

Community gardens provided participants with opportunities to engage in activities that supported their wholistic health and wellness and were highlighted as something that went beyond merely providing healthy, high-quality, and affordable foods. Gardening supported many to be more physically active, to maintain social connections, and their connection to nature, all of which contribute to the health and wellbeing of participants.

> I love picking berries because it is spiritual. I can't walk long distances to the bush. You know, I can't walk that much, so I go to the farm [market garden] during their U-pick days. We pick strawberries and raspberries. (Female, 84 years)

> I pick my berries from the farm [market garden] when they open it to the community. It's always nice to pick those berries and the connection with nature. A pail of strawberries was $25 last year. (Female, 72 years)

> I get involved in the community garden. I have a plot there. It keeps me active. … At least there are body movements when I am there. … Physical strength is what I get by planting my vegetable in the garden. I missed it during the winter, but I guess it is nature. (Male, 70 years)

> I communicate with others when I am working in the community garden, especially the younger ones. I tell stories about my Dad's garden in the past and the importance of

> eating healthier local foods. Hopefully, the young people could see that, start eating healthier We chat about many things, and I learn a lot at the garden. (Male, 62 years)

5.4.2 Respecting seasonal changes, "It's for my safety." Physical strength and good physical condition are required to participate in hunting, trapping, fishing, and spending time on the land. Participants noted that they had to adapt the timing and their approach to engaging in activities on the land as their physical abilities declined with age. Some participants described that their ability to be in and navigate the bush became more difficult compared to when they were young. Many discussed thinking differently about when to be on the land and how to go about being on the land with people who can support them to engage in land-based activities to be healthy and age well in place. It became clear, however, that Métis older adults valued any time spent on the land, and they sought out ways to maintain their engagement in land-based activities even when it became physically challenging to do so.

> It is becoming increasingly risky to travel on the lake. The ice melts early, very early. For most of the last winter, I was at rehab. I fell through the ice and hit my knee. In the coming winter, I have decided to stay away from the lake in March because it is becoming scary. I have to protect myself too. You can fall through the ice, and when no one is there, you may die. (Male, 69 years)

> Last time, we were caught out there in the bush. It was a nice day, but things changed so fast. … It got windy, strong winds and debris were flying all over. I got hit at the back of my head. My boys brought me home. I was here for two months without going anywhere. … Not even the Elders' Lodge. (Male, 90 years)

> Yes, every older person in this community knows the season for the heavy rains and winds. We all know it is risky to be out there during that time. If you are not careful, you will be struck out there. At my age, how fast can I run home? For me, I hardly go out there during that time. It's for my safety … stay out of danger. (Female, 67 years)

These comments reveal that being outside is important to the health and wellbeing, and to supporting aging well in place. However, as climate and weather patterns change, older adults respond differently by varying when and how they are on the land in order to maintain a connection with the land.

5.4.3 Walking… "keeps me active." Walking was highlighted as a common thread through many interviews as an activity that was possible across diverse ages and abilities. Participants noted that they chose to spend time walking, as their ancestors once did, for reasons that went beyond just physical activity and mobility. Some participants described how a nature walk on trails in the bush and walking within the settlement ensured the maintenance of physical fitness and staying active, but also was an activity that allowed them time on the land in lieu of going hunting, fishing, or berry picking (which were activities that were becoming too challenging for some aging participants). Spending time on the land, taking in the smells and the scenery, supported emotional and spiritual connections as well.

> I am unable to hunt regularly because of the physical challenges that I have. … But I still keep myself active. I usually walk in the neighbourhood. … Whether it's the summer or winter. (Male, 78 years)

> During summertime, I walk to Sandy Point to enjoy the scent from the lake. I stay active that way. I enjoy walking the trail in the bush. It's a nature walk because you get closer to nature when you are there. (Female, 69 years)

> Walking is what keeps me active when I am not out there fishing or trapping. I walk in the community. Sometimes to the Elders' Lodge and back. (Male, 90 years)

Walking is not the only leisure-time physical activity the participants engage in; riding bicycles around the community when they are able allows them to stay active and keep their "bodies in shape." Some participants described moving around the community on their bikes during the summer months.

> In the summer, when I am not on the land, I bike in my spare time. What I do is ride my bike. I go as far as the airport. … Good exercise. (Male, 69 years)

> I make sure I've at least five hours of bike riding each week in the summertime. It keeps our bodies in shape. (Male, 56 years)

There are various supports for walking and biking that existed in the community. Métis older adult participants pointed to the important role families and friends play in supporting these leisure-time physical activities. Several participants described how they engaged in these

activities with their family and friends. They also mentioned meeting friends, family, and other community members to socialize while engaging in leisure-time physical activity together.

> My daughter will call me in the evenings to go for a walk. You will be surprised to see the number of people who walk during that time. (Male, 71 years)

> I walk from here to the other end of town to call my friend DS to go for a walk in the park there … at high school. When I am walking in the park with my daughter, time goes by quickly. (Female, 69 years)

> I have two other Elders in the community who bike with me. We usually ride our bicycles within the community. … I am always motivated to ride my bicycle to stay healthy. (Male, 74 years)

Several participants also discussed challenges or constraints to keeping active by walking and biking, including safety along the highway, fear of animal attacks, and community design. These posed numerous challenges to the safety of participants. Some of the participants indicated that they were concerned about their safety.

> At certain times, I have to go off the road because of the cars. There was a time I got stuck in snow along the highway here. … There are no sidewalks or proper street lighting in the community. This makes walking unsafe for me, but I still do it anyway. (Female, 69 years)

> And I know that we used to be able to, like, go walking or biking to the airport or the tower, and it would be fine, but now there are bears out there. … And the dogs in the community. It is scary, but I still walk and bike. You only need to be careful when you are out there. (Male, 62 years)

These comments suggest that safety is important to older adults as they engage in leisure-time physical activities to be well and age well. The comments also indicate that even though these safety issues are likely to impact negatively on leisure-time physical activities, being aware these safety issues exist and staying alert is critical for participants for continuous involvement in these activities for their health and wellness. Several participants acknowledged the importance of having the paved outdoor track (located outside the local high school) that supported being active and safe.

5.5 Summary

This chapter has examined, in detail, Métis older adults' relationships with their land and its impact on their health and wellness. It offers a nuanced analysis of the multidimensional importance of the land to the health and wellness of older adults. The findings reveal that the land is critical to Métis culture and the wholistic health and wellness of older adults. The associations of Métis traditional lands, culture, health, and wellness shape their sense of belonging and attachment to place. However, the ongoing loss and destruction of land due to historical and cotemporally conditions, including colonization, climate variability, forest fire, and clear-cutting, continue to limit access to the land and impact land-based resources. These tensions have been key contributors to negative health outcomes experienced in the community. Thus, contributing to the significant health disparities between Métis older adults and their counterparts in the overall population. Despite the limited access to land, the findings show the strength and flexibility of Métis older adults by drawing on both past and modern practices to continue to access the places and spaces on the land that support them to be well. These provide pathways for older adults to shape their health and the health of other generations as well as their continued attachment to place. The next chapter examines the spatial attributes of place attachment identified by participants.

CHAPTER SIX RESULTS: SPATIAL ATTRIBUTES OF PLACE ATTACHMENT

Place attachment describes emotional bonds people develop through engagement experience with a place. These strong bonds that people develop for places are constructed through interactions with the physical environment. The culture of people mediates these interactions. Geographers use geographic information systems (GIS) to map places and people's interactions with a place in detail, making many aspects of place locatable for analysis. To visualize place attachment in Île-à-la-Crosse, places identified by the participants were mapped. This chapter presents the results of the spatial analysis conducted for the study. Specifically, this chapter focuses on mapping older adult's place attachment, identifying the spatial patterning of place attachment, and analysis of landcover/ land use change.

6.1 Spatial Patterning of Places of Attachment

In this study, I asked participants to locate places on the land they find "most favourable" and where they would like to spend time. The places identified were spatially related to their culture and tradition. These include berry picking areas, cabins, camping spots, fishing spots, homesteads, hunting grounds, and traplines. A total of 50 locations were identified as places of attachment. Of this number, the total number of locations identified for each feature are berry picking areas (3), cabins (14), camping spots (3), fishing spots (7), homesteads (13), hunting grounds (5), and traplines (5) (Table 6.1 and Appendix A).

A directional standard deviational ellipse (SDE) was employed to characterize the spatial pattern of places of attachment. An SDE is a tool that enables a user to determine the directional trend in the overall distribution of point features (Read et al., 2010). This tool is internal to the ArcGIS platform (Environmental Systems Research Institute (Esri), 2018). The directional ellipses in Figure 6.1 show the standard distribution (standard deviation in x and y directions) of places of attachment (Read et al., 2010). In addition to providing information on the distribution of features, the elliptical polygon provides evidence of the mean centre of the distribution of all the locations of places of attachment mapped.

Figure 6.1 shows the results of the SDE analysis for places of attachment. The places of attachment are generally distributed throughout the land in and around the community. The places of attachment are clustered at the northeastern and southwestern parts of the map. For example, Figure 6.1 shows that clusters of cabins, fishing spots, and traplines can be found at the

northeastern side near Black Bay, Mogloair Bay, and near the centre to the south. The locations to the northwestern and southeastern parts of the community are less clustered.

The locations identified by participants tend to cluster outside the community's boundaries, indicating that many of the participants have to travel away from their current community boundaries to access places of attachment. The mapping in Figure 6.1 shows that while a smaller number of participants identified locations within the community boundary, most of the participants identified locations outside the boundaries of the community as places of attachment. Overall, except for about five locations that are within the immediate boundaries of the community, all the other places of attachment are located outside the boundaries of the community. It can also be observed from the mapping that most of the places of attachment that fall outside the community's boundaries are arranged along waterbodies in the area. For instance, apart from fishing locations, hunting, cabins, and homesteads, locations are found exclusively on or closer to navigable waterbodies in the area. This is critical because this was the only mode of travel.

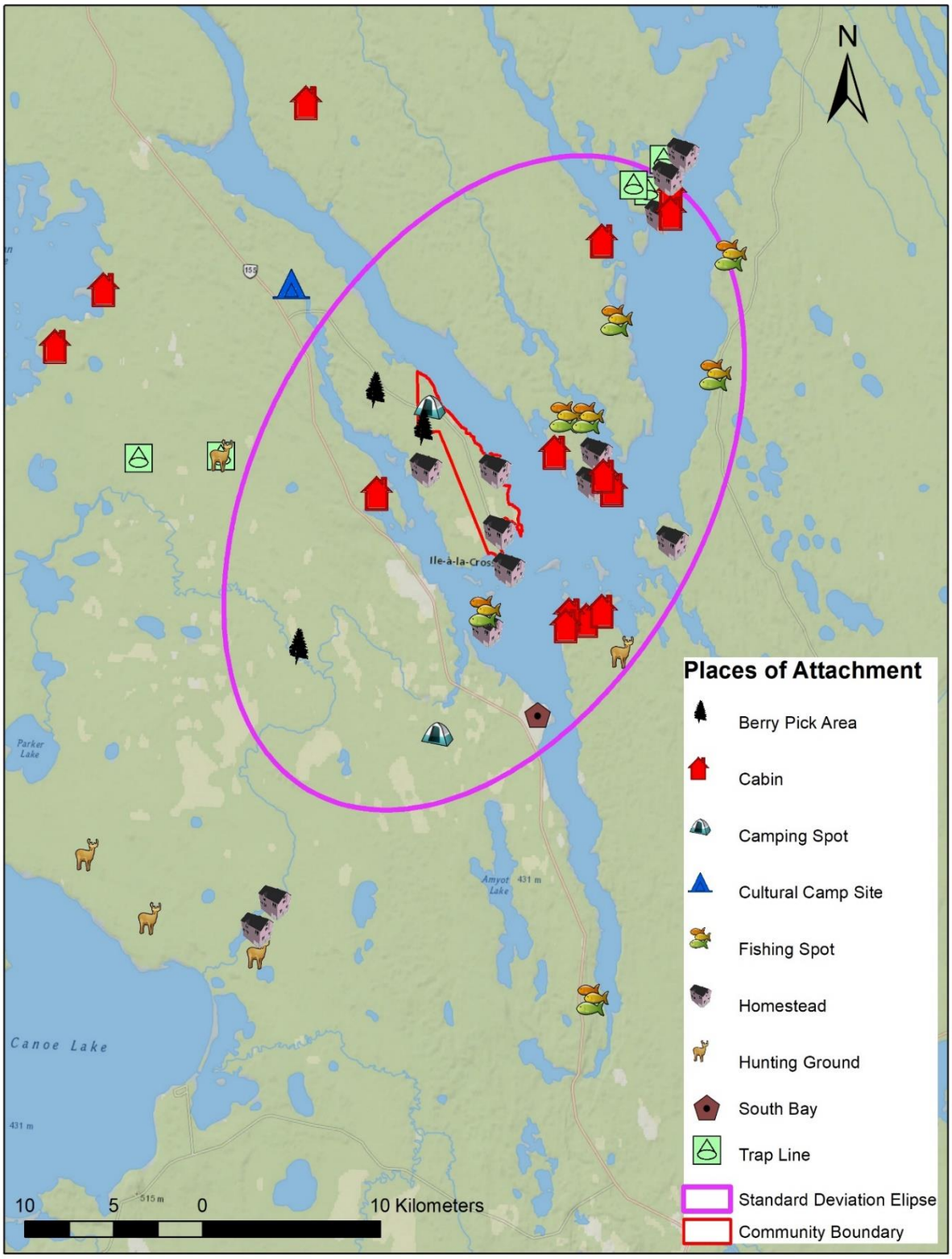

Figure 6.1. Spatial distribution of places of attachment using standard deviational ellipse.

Furthermore, the mapping suggests that the locations of some of the places of attachment could be linked to activities occurring at other places of attachment (Read et al., 2010). For instance, cabin and homestead locations could be linked to places of land-based activities. This is suggested by the proximity of homestead and cabin locations to places of land-based activities such as traplines, hunting grounds, and fishing spots. Except for a few locations of land-based activities at the northwestern and southern sections of the map, other places of land-based activities are closer to homestead and cabin locations. This suggests that there is a linkage between these locations.

Participants provided many insights that can be used to explain the spatial patterns observed in the maps. First, during my time in the community, I heard several stories regarding where community members had been living in the past. These former places of residence tended to correspond with current places of attachment. The participants told me that previously, most of them were living on lands located across the lake (Lac Île-à-la-Crosse) because the area was rich in the animal and plant species that supported Métis land-based activities.

> We lived across the lake. The priest came over there with a boat and motor and told my parents that we had to go to school, and if we didn't go to school, they were going to send us to … the welfare would pick us up. Our parents got really disturbed, so we moved [into the community]. (Female, 72 years)

However, this residency pattern changed during the twentieth century as the desire to obtain an education for their children led to them moving to their present location in a permanent village, where the residential school was located. The Catholic church in the community was also located at this place because it was a church-run school until the early 1970s when the community took over the control of education. Currently, it remains the only community in the province that has this level of control over education. In this respect, the landscape of attachment, and the places that community members identified, belonged not solely to the present geography of Île-à-la-Crosse but also to an earlier traditional landscape that they had in part been forced to abandon.

Second, during casual conversations and interviews, community members told me stories about life in the past and how living along waterbodies supported it. There was no access road leading to the community until the 1970s when a permanent road connection was constructed to the highway, so the primary mode of travel was by water and walking. Some of the community

members indicated that living along waterbodies not only provided access to water for their homes but also provided a means for travelling to other communities.

> Our home was across the lake here, so we never worried about good and clean water. We paddled and walked everywhere those days. My Dad and I could paddle as far as Pine house. The discussion for the road began in the 1950s. My Dad was one of the people who signed a petition to the government. (Male, 90 years)

> He told me about how they paddled to other communities, which then allowed them to engage in opportunistic hunting. Also, the water provided a quicker way of accessing harvesting sites. (Field notes, June 11, 2018)

In the past, besides having a gun, bullets, fishing net, or trap, harvesting from the land involved just paddling and walking. Therefore, by living along waterbodies, community members were able to move around to engage in land-based activities at different locations. Additionally, apart from fishing, some of the community members told me about how many opportunistic kills [game] occur along waterbodies. Thus, waterbodies provide an opportunity for coming across animals while doing other activities than hunting.

Finally, in my interactions with some of the participants, many of them indicated that when they travel to distant locations to engage in land-based activities, they do not make an immediate return journey. Rather, they spend more time at these locations by sleeping in their cabins because these journeys can take a half-day or more. I was told that at the peak of the hunting season, some hunters could stay up to a week on the land hunting and living in their cabins. Additionally, during the interviews, some of the participants mentioned that they engage in land-based activities — berry picking, trapping, fishing, and hunting — when they go to their cabins. In essence, these more distant destinations become extensions of their permanent homes in the village; secondary activities at nearby sites are carried out in order to support this short-term residence.

6.1.1 Distance from community, mobility, and accessibility to places of attachment. To understand the extent of travel, I calculated straight-line distances from the spatial centre of the community to all the places of attachment identified by participants. It was impossible to follow and track the real routes participants use on the land due to time and logistical constraints. I acknowledge that community members are unlikely to travel in a straight line to these places of

attachment. However, while this measure does not reflect the full extent of travel, straight-line distances provide valuable information about spatial patterns of places attachment for the community and a general sense of the extent of this region.

Based on these straight-line measures, it is evident that many older adults' homes in Île-à-la-Crosse are a considerable distance away from their places of attachment. Indeed, places closer to Canoe Lake in the southwestern direction of the community are located a considerable distance from the village. In terms of the collective distances for all the groups, the average straight-line distance from the centre of the community shows that a minimum of 8 km (average distance to all berry pick areas) and a maximum of 23 km (average distance to all hunting grounds) (see Table 6.1 and Appendix A). However, an analysis of the single places of attachment shows that most places occur in a zone 2.5 – 20 km from the centre of the community (Appendix A). Some of these places are far from current community boundaries. For instance, some hunting grounds are 30 km straight-line distance from the community. It is likely that, in these cases, this could require as much as 70 – 80 km of travel from the community. This can be a significant expenditure of time and energy. After one of my hunting trips with the community members, I noted this in my field notes:

> I joined three of the community members on a hunting trip. On this trip, we travelled about 50 km from the community. It took us almost half-day to get to our destination. (Field notes, September 29, 2018)

These distances undoubtedly would affect access and utilization of these places by older adults who demonstrate limited mobility. It is readily apparent from the mapping that the distribution of places of attachment is sub-optimal for maximum access by Métis older adults living in the community. Other researchers have found geographical access as a barrier to accessing healthcare (Meade & Emch, 2010; Read et al., 2010). In the long-term, continued use of important places by older adults may require transport support to overcome the logistical issues imposed by distance.

Table 6.1.

The average distances from the centre of the community to places of attachment

Places of attachment	**Total number of locations identified**	**The average distance from the community (km)**
Berry Pick Area	3	8
Cabin	14	14
Camping Spot	3	11
Fishing Spot	7	14
Homestead	13	12
Hunting Ground	5	23
Trapline	5	18

During my time in the community, I learned about the contribution of technology in accessing distant locations. As a whole, transport technology has had both negative and positive impacts on the community. People told me how technology has made life easier for them to access distant locations in a short time. However, a few others explained that the "machines" have a negative impact on land-based activities. After meeting a hunter in the community, I wrote this in my field notes:

> The skidoos, motorboats, and the other machines are good, but they scare everything away. I was told that when people hunt with these "machines," the animals run away from them because the animals are scared of machines. This does not only decrease the chances of opportunistic hunting, but also the success in getting a kill (game) when they

> are on the land. This, notwithstanding, I was told that it was challenging to be successful on the land without the machines. (Field notes, May 10, 2018)

Spatial accessibility to some of the locations identified by the participants was found to vary among older adults who participated in this study. Some who have personal transport tend to visit more distant locations more frequently than others who identified locations nearer to the community. For these mobile participants, distance to places of attachment was not a deterring factor. In discussing how they access these distant locations, participants mentioned cars, skidoos, and quads as the primary forms of transportation. Some of the participants commented:

> I have got a quad and a skidoo so I can go there [place of attachment] anytime. (Male, 69 years)

> When the family is coming with me to this place we drive. … There are other times where I go there with my quad when the weather is nice. (Male, 78 years)

Apart from cars, quads, and skidoos, community members access places by boat. During my time in the community, I observed that some community members were using boats on the lake to travel to different locations. All the boats on the lake had a motor attached to them. I rarely saw people paddle on the lake, except the Elders' canoe competition. In a chat with one of the community members, he told me that motors were preferred because it is the fastest way to travel on the lake. These feelings were echoed by other people I met during my time in the community. This concession means that rapid transportation allows older adults to access spaces and places that are consistent with their cultural and traditional practices. In this respect, technology has had a significant impact on both activity levels and practices, as previously, community members had paddled in skiffs[22] on the lake.

The spatial patterns and the observations above reveal that spatial accessibility to some of the places might be difficult for some people in the community. This is especially true for those who lack personal means of transport. In talking about how they access distant locations when

[22] A small flat-bottomed boat. It has a pointed bow. However, it can come in a different style depending on the choice of the person manufacturing it. In the past, community members manufactured their skiffs to enable them to travel on the lake for fishing, hunting, and leisure.

they have no personal transportation, participants mentioned that they depend on support from friends and family as well as other community members.

> There are people here who are always ready to help you to get to this place. My friend RP is always ready to lend me his quad. … Growing up, we walked. There were so many of us, so you don't feel the distance. These days it is difficult to find somebody in the community walking to this place. It seems far from here, so quad and cars are the way to go. (Male, 70 years)

> It's quite a distance from the community, but I like it there. I rely on my brother and his first boy [son] to get to this place. They give me a ride in their car to this place. (Female, 62 years)

These comments demonstrate the importance of reciprocity and collective responsibility toward one another in supporting the health and wellness of Métis older adults by providing access to ancestral places of attachment, which support their health and wellness.

The increasing cost of technology — skidoos, vehicles, motorboats, and quads — was often cited as the reason for relying on friends, family, and other community members to access places of attachment. I recorded the following comment in my field notes after interacting with one of the community members on a hunting trip.

> We had a chat on the animals they trapped and hunted in the past. He told me that they trapped and hunted all kinds of animals, and recalled a year when lynx was $600 (per skin). He caught two of them for $1,200 that year and bought a skidoo with that money. He indicated how skidoo and quads are expensive today. Therefore, he is unable to acquire one for himself. (Field notes, June 8, 2018)

My observations and experiences revealed that with the increasing costs of technology, the less affluent might be unable to afford the needed technology to travel beyond the immediate limits of the village. In this respect, those of limited means would be unable to easily access the places that support them to be healthy and age well in the community.

6.2 Mapping Sense of Place

After identifying places of attachment, participants articulated the reasons why they feel attached to these places. In Figure 6.2, places that participants identified are mapped according to a

methodology developed for integrating spatial interview data with locations. The strategy provided place-specific information on locations of participants' places of attachment. In describing why they decide to go to these places, participants discussed the biodiversity, historical, cultural, and spiritual importance[23] of some of these locations. For example, some of the key factors that participants identified as influencing their decision to choose specific fishing and hunting locations include the availability of preferred fish/ animal and plant ecologies.

In some instances, decisions to choose specific places over others were found to be intergenerational. Thus, in this study, many of the preferred locations seem to have been based on knowledge transferred from past generations. For example, after a conversation, with one of the participants, I noted these comments in my field notes:

> He alluded to the relationships between the youth and Elder and how it promoted belonging to the land and told me about the stories and knowledge shared by his dad and grandfather that have enabled him to express his feelings and understanding of this place. (Field Notes, April 26, 2018)

Figure 6.2 portrays the spatial locations of places of attachment identified by participants alongside some of the qualitative data to illustrate the significance and meanings participants attach to places on the land.

[23] The meanings participants attach to places are explored in Chapter 5 of this thesis.

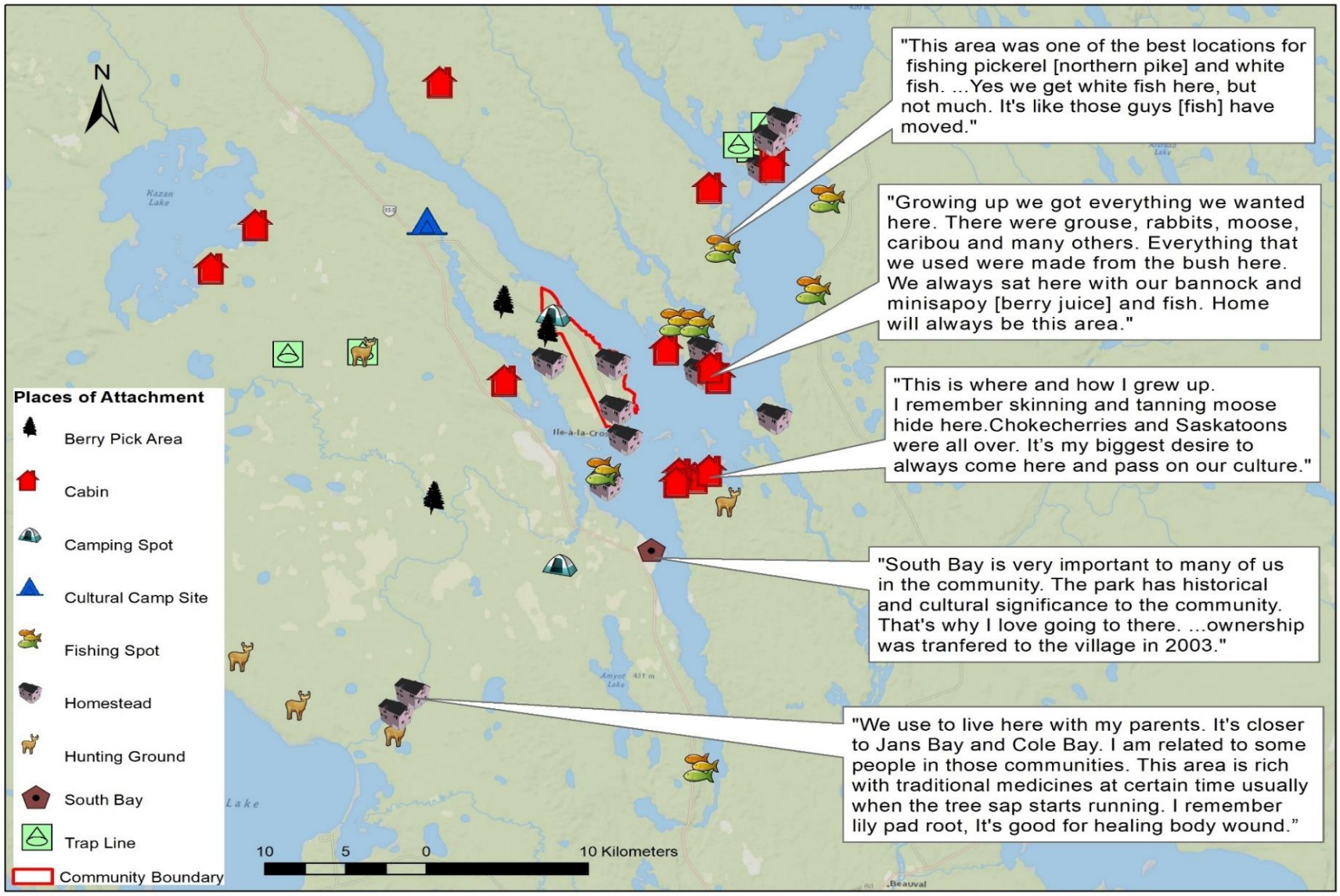

Figure 6.2. Map showing locations of places of attachment integrated with qualitative data.

6.3 Land Use/Land Cover Changes Occurring Within Community Boundary

In addition to mapping current places of attachment, I carried out a land use (LU)/land cover (LC) change analysis in response to participants' observations that the landscape had changed from earlier periods. During interviews and casual conversations, participants repeatedly mentioned how they used to pick traditional medicines and berries and shoot moose and caribou at locations close to the community. However, ongoing changes occurring to/on the land are impacting the availability of local food and medicines at locations close to the settlement. Community members emphasized that it is becoming increasingly difficult to engage in land-based activities within the community's boundaries.

After hearing these stories, I decided to identify the extent of LU/LC change occurring within the community's boundary. As noted in the methodology section, two orthophotos of the community (2005 and 2017) with a resolution of 0.625 metres were obtained from the Saskatchewan Geospatial Imagery Collaborative through the University of Saskatchewan Library. The ArcGIS digitizing tool was used to manually classify the LU/ LC features that can be seen on the images. These photos were classified into five categories: bare soil, grass/low-lying vegetation, impervious surfaces, open water, and tree canopy. In this section, the results of the classification analysis are presented.

The LU/LC map (2005 and 2017) of Île-à-la-Crosse is presented in Figure 6.3. In order to ensure that valid conclusions are drawn from the required image, accuracy assessments were performed on the classification image. The accuracy assessments for the overall classifications were 94.3% and 94.1% for 2005 and 2017, respectively. Brown, Pearce, Leon, Sidle, and Wilson (2018) have argued for accuracy assessment above 90%, which was attained in this project. A summary of the classification results for 2005 and 2017 are in Table 6.2. Absolute numbers of total coverage (km^2) and percentage of classes are used to show LU/LC practices observed within the community.

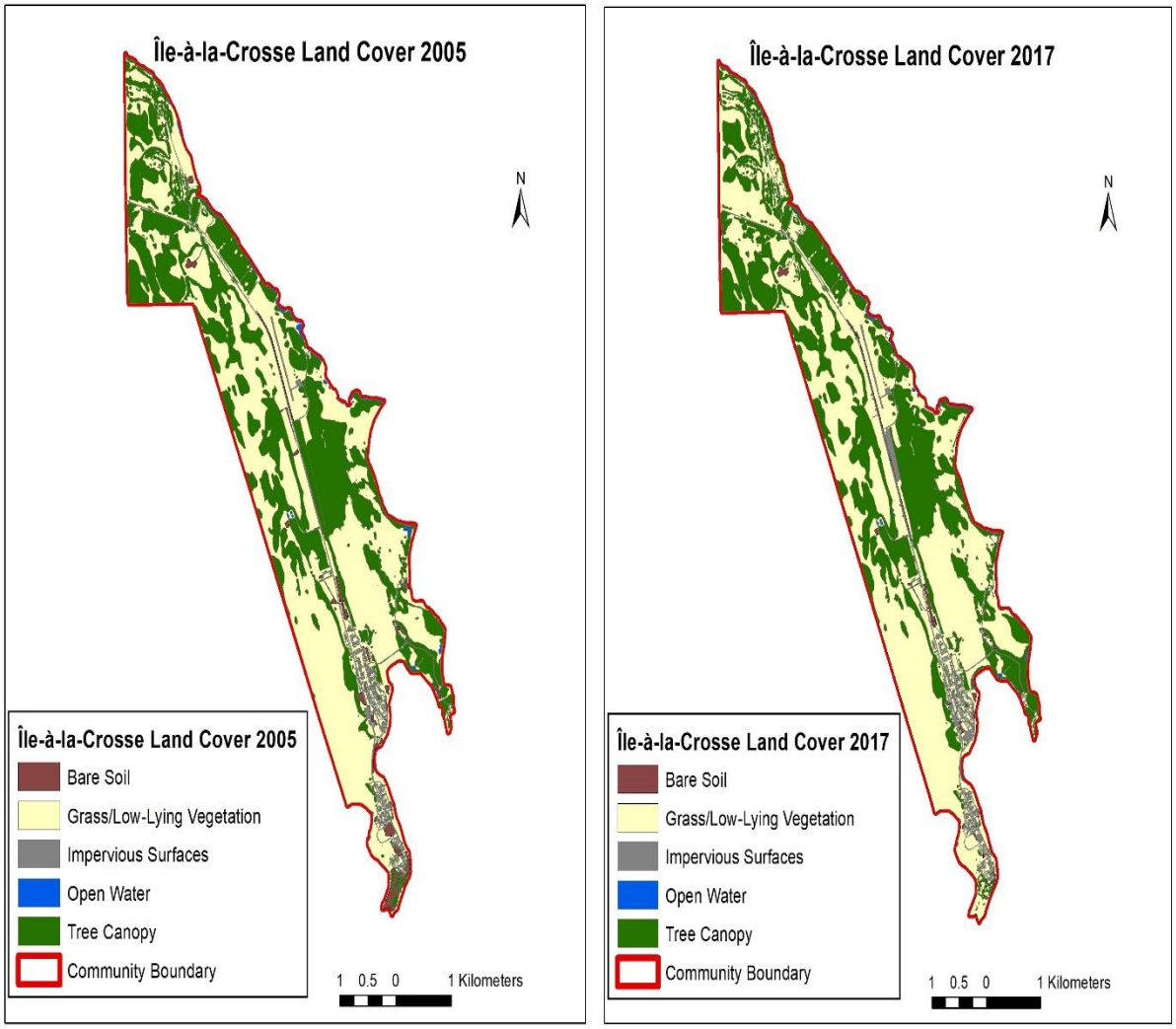

Figure 6.3. Land classification of Île-à-la-Crosse, 2005 and 2017.

Table 6.2.

Land cover/land use classes and areas in kilometres (km)

Land cover/Land use classes	2005		2017		
	Area (km^2)	%	Area (km^2)	%	% of change (2005 and 2017)
Bare soil	1.0	4.2	2.0	8.3	4.1
Grass/Low-lying vegetation	3.5	14.6	4.6	19.2	4.6
Impervious surfaces	3.0	12.5	4.3	17.9	5.4
Open water	1.6	6.7	0.5	2.1	-4.6
Tree canopy	14.9	62.0	12.6	52.5	-9.5

The results from the analysis show a decrease in open water and tree canopy during this 12-year span, whereas bare soil, grass/low-lying vegetation, and impervious surfaces increased. Open water, which is among the least extensive land cover class in 2005, shrank from 1.6 km^2 (6.7%) to 0.5 km^2 (2.1%) of the total area covered by the community. Tree canopy reduced from 14.9 km^2 (62.0%) in 2005 to 12.6 km^2 (52.5%) in 2017. The total area covered by bare soil increased from 1.0 km^2 (4.2%) to 2.0 km^2 (8.3%). Similarly, grass/low-lying vegetation and impervious surface classes increased in their share of the total land cover from 3.5 km^2 (14.6%) to 4.6 km^2 (19.2%), and 3.0 km^2 (12.5%) to 4.3 km^2 (17.9%), respectively (Table 6.2).

The comparison of each of the LU/ LC classes shows that there has been noticeable land use change over the study period. The trend of LC/LU changes observed in the GIS analysis is consistent with and compliments the stories[24] participants told about observed changes to their land. A significant observation in this study was the decrease in the tree canopy in the area with a net decrease of 9.5%. The analysis shows that the study community witnessed considerable areas of tree canopy converted into grass/low-lying vegetation and impervious surfaces. The

[24] These stories are explored in detail in Chapter 5 of this dissertation.

impervious surfaces include the expansion of settlements and other rural development activities. This can also be attributed to the increase in population in the community over time.

The participants mentioned natural and anthropogenic factors, including forest fires, clear-cutting/logging, mining, and construction. During my time in the community, deforestation through logging was something community members regularly discussed. Specifically, community members were concerned about the impact of clear-cut/ logging on their land. Many of these concerns revolved around non-consultation regarding land use, as external agents proceeded with little input from local people, and that their compliance was assumed. As shown in my field notes:

> At this meeting with some of the community members, they discussed the importance of the land and the need to reclaim their traditional territories. Many expressed their frustrations with logging companies in the area. After this meeting, one of the community members took me to a place within a 50 km radius of attachment where a logging company had begun logging. I was told the community members stopped them because they were not consulted. I observed that this location had low[er] lying vegetation than nearby locations. (Field notes, June 10, 2018)

Further comparison of LU/LC change in 2005 and 2017 derived from the land cover classification analysis shows that open water in the study community shrank by 4.6%. Open water area decrease might be due to an increase in the developed area, which is associated with demand for infrastructure to support community living. However, another explanation may be that the orthophoto might have taken at a time when the water level in the lake (Lac Île-à-la-Crosse) was high. In my interactions with the community members, they told me that water levels in the lake could be very high at certain times of the year. When this happens, some parts of the community nearer to the lake can be flooded.

Another LU/LC class that saw an increase in land cover is bare soil, with a net increase of 4.1%. The increase in the area covered by bare soil can be attributed to deforestation occurring in the community. As indicated earlier, the activities of logging companies have rendered some areas barren and exposed. After an interaction with some of the community members in the bush, I recorded the following comment in my field notes:

> They mentioned the poor treatment of the land in the community and pointed to locations which were invisible from the village, but now these places are visible when you look through the woods. (Field notes, April 20, 2018)

In some instances, some of the places noted to be supporting traditional activities in the past have been abandoned by the community members. During my time in the community, some community members took me to travel through some of these abandoned and fragmented places that supported land-based traditional activities. The following comments were recorded in my field notes:

> As we move through the woods, I wanted to find once past traces of land use and human occupation. Through my interactions with the community members, I saw that traces of community usage of this area had slowly been "eaten away" by time and process of abandonment by the community due to environmental changes. (Field notes, May 3, 2018)

These clearly show that LU/LC change occurring in the community is impacting the daily lives of the community members.

Based on the GIS analysis and results obtained for this study, it is evident that the LU/LC classes within the boundary of the study community have changed. The changes in LU/LC in the study area are evident by the decline in the tree canopy and open water classes as well as the increase in bare soil, grass/low-lying vegetation, and impervious surfaces. Although some of the changes do not seem statistically significant, this snapshot of change provides a piece of vital information to corroborate the stories some of the participants shared during the interviews. Equally important, the availability of data limited my analysis to a period just over a decade. Some of the LU/LC changes observed throughout this period were undoubtedly underway well before 2005, and the extent of landscape change that the older people of Île-à-la-Crosse have had to cope with far exceeds that presented here. Moreover, even with the limited duration of this study, the changes observed in the various classes are likely to have had (and continue to have) implications for their sense of place, which can impact participants' health, wellbeing, and their ability to age well in the community.

6.4 Summary

This chapter identified a unique way of mapping places of attachment identified by older adult participants. From the perspective of the participants, their attachment to place is not always linked directly to the Western boundaries of the community, but beyond. As presented in this chapter, some of these places were far from the community. In such instances, this posed as a barrier limiting access to some places for some of the participants. However, the kinship structures and the value of reciprocity in the community was revealed as an asset that helps some of the older adults to access distant places, which supports their health and wellness. Also, the land cover classification analysis revealed an ongoing change in the landcover within the community. These changes were consistent with Métis older adults' observation of the changes occurring on the land (as described in Chapter 5). These findings have critical implications for knowledge development necessary for policy and practice to improve aging well in place among Métis older adults. The next chapter presents a discussion and implications of the findings of this study.

CHAPTER SEVEN: DISCUSSION AND CONCLUSIONS

This research project sought to investigate Métis older adults' relationship with their land, exploring their perceptions of the influence of space and place on aging well. The results from this project reveal that the land is critical to the health and wellness of Métis older adults to age well in place. Throughout this study, the participants demonstrated that they were living and reaching different places on the land that support who they are for their health and wellness. Interestingly, these places are well beyond the Western boundaries of their community. The study also revealed landscape changes that impact their relationship with the land and challenge their health and wellness. In spite of these challenges, this study reveals how older adults endure and survive to age well in place. This chapter presents the strengths, limitations, and a discussion situating the results within the broader scope of geography and Indigenous health literature. The discussion highlights the important interconnections between space, place, and aging well among Métis older adults. Conclusions, future research directions, and implications for the community are considered.

7.1 Strengths and Limitations of the Study

This study is the first step toward documenting the influence of the natural environment on aging well for Métis in Saskatchewan. The knowledge gained from this study will add to Métis-specific literature in general and more specifically to Métis health research in Saskatchewan. Another strength of this study is founded on the research approach and methodology. The use of CBPAR ensured that local priorities, perspectives, and challenges were integrated at every stage of the study. As it is only the community members who can help highlight these, CBPAR allowed this project to be fundamentally participatory in nature, providing opportunities for participant and team input into the entire research process in a way that would not be possible with other research approaches. This collaborative research is fixed in Métis voice and participation, and the knowledge produced has been authenticated by the community co-leads and Métis older adult participants.

There are, however, some limitations. In terms of land cover classification analysis, a much older image may have shown significant changes in the land use (LU)/ land cover (LC) analysis than is seen in the available imagery. Nevertheless, the LU/LC analysis provides the first systematic investigation of the land cover within the community and provides a piece of

useful complementary information in this study. It also provides valuable data for other researchers interested in studying land changes in the community. Also, as an adult male from Ghana, I generally spent more time with men in the community, and I suspect through the relationships I formed with the Métis men, it could be suggested that more men were aware of my project and thus influenced their interest in participating in my project. This, of course, was unintentional but may explain why more men participated than women. Finally, many of the older adult participants who were recruited for this study were relatively mobile, active, and engaged in land-based activities in the community. This restricted the range of perspectives participants shared with me. For example, the views presented in this study do not fully account for older adults in the community who may be less mobile, or otherwise less active to be on the land to participate in land-based activities.

7.2 Land is Essential to Métis Health and Wellness

The land is essential to the health and wellness of Métis older adults. The participants mentioned that they have a strong and unique connection to their traditional lands (both within the community and the surrounding land) that supports their wholistic wellness, sense of social connection, and connection to the past, and provides intergenerational mentorship and sharing of essential knowledge. Attachment to specific places and spaces on the land were clearly linked to perceptions of wellness and aging well in place. In parallel to these findings, other researchers have highlighted how Indigenous lands have been previously identified as important places that bring health, wellness, attachment, and meaning to people (Ballard et al., 2020; Pace, 2020). For example, consistent with the findings of this study, Pace (2020) found that Inuit live in a health-sustaining relationship with their land by depending entirely on the resources of their land for survival, including food and shelter. Inuit traditional lands occupy more than just a physical space; it is a central feature upon which Inuit have developed strong cultural identities, transferred knowledge between generations, and fostered health opportunities. These connections illustrate a strong attachment to their traditional lands (Pace, 2020). Similarly, in this project, aging well in place for Métis older adults is strongly linked to their ability to access the land as these connections encompass pillars informing their wholistic wellness (in the four domains of physical, cognitive, emotional, and spiritual wellness).

As Métis older adults described being well, they also talked about the importance of the land for their cognitive, emotional, physical, and spiritual health and wellness. Several examples,

such as hunting, fishing, trapping, and hauling of wood, were given of land-based activities that contribute to their wholistic health and wellness. The restorative role of the land in promoting feelings of peace, rejuvenation, and joy contributing to the emotional and cognitive health of participants was clearly articulated. Similar to J. G. Bartlett et al. (2012) and Jacklin and Walker (2020), where time spent on the land was understood to provide stress relief and time to think, Métis older adults in this study experienced stress relief, memory improvement, and the ability to think clearly when engaging in land-based activities. At the same time, land-based activities require physical strength, walking, and other movement patterns supporting physical health. Further, the process of procuring food from the land connects physical activity and healthy eating as well as connection to the land and ancestral practices, thus providing Métis older adults with an enhanced sense of spiritual wellness. These findings are grounded in a Métis culturally specific understanding of aging well in place and are in line with the concepts highlighted in Blackstock's BOL theory through her Aboriginal ecological framework (Blackstock, 2007). Blackstock suggests that wholistic health and wellness are conceptualized as the interconnection and balance between the cognitive, emotional, physical, and spiritual dimensions of health (Blackstock, 2007). She locates these ideas in an Aboriginal ecological framework that places the "world" at its core. If an Aboriginal epistemology is "applied, the [individual], family, community and world are wholly affected by four interconnected dimensions of knowledge" (Blackstock, 2007, p. 4). These observations resonate with the findings of this study.

Participating in land-based activities connected older adults to other people and animals. For example, many participants spent time at their "cabins," also referred to as "home," where Métis older adults connected with family, friends, animals, plants, and the land. Additionally, the cabins could be viewed as a network of permanent homes, which offer access to different needs for being well. This is not so different from the traditional seasonal cycle of movement of Métis families on the landscape with different family groupings accessing slightly different but overlapping areas with full kinship gatherings once or twice a year. The quality of contact older adults had with people and animals contributes to their sense of Métis identity, social connection, and connection to generations past. Indigenous older adults, especially those living in rural areas, increasingly face a greater likelihood of social isolation (Beatty, 2018). Studies have shown that older adults who have close social connections live longer and also cope better with health conditions and experience less stress and depression (Beatty, 2018; Cooper et al., 2020).

Interestingly, the findings of this study support that connection to the land could serve as a protective factor supporting older adults to remain socially engaged and to age well in place.

The land provides ancestral linkages that strengthen and maintain Métis identity. During my conversations with participants, many of them talked about how spending time on the land and connecting to places from their past and participating in land-based activities brings them closer to their ancestors. Additionally, Métis older adult participants felt grounded, attached, and connected to their ancestors and the teachings that were brought forward to them when they were young children so that they can maintain health and wellness based on the same teachings. Many of these teachings happened when they were active on the land, participating in land-based activities. Older adults indicated their desire to share this knowledge and the teachings that they received on the land in a similar way. These results corroborate the findings of previous works, which showed that Indigenous Elders from Canada (Rowe et al., 2020; Tobias & Richmond, 2014) and the United States (Jennings et al., 2020) prefer participating in land-based activities such as hunting, fishing, and trapping to teach their traditions and practices. Experiential teaching and learning are critical in many Indigenous cultures because it involves making meaning from direct practical experiences (Tobias & Richmond, 2014). Moreover, this place-based learning has meaning within traditional understandings of relationships with the land and has been identified as an effective way of learning and protecting Traditional Knowledge (Finn, Herne, & Castille, 2017). The knowledge about the land is unwritten, local, and collective. It is generated cognitively through a long history of land use and is passed on experientially and orally to the younger generation.

The land plays a significant role in supporting intergenerational interactions and the sharing of essential knowledge, two elements that inform aging well in place. Participants described interacting with the younger generation on the land and teaching them essential knowledge, including fishing, hunting, trapping, and gathering plants and medicines. This relationship, while benefitting younger generations in learning about their Métis culture and practices, reciprocally benefits older adults in finding meaning in giving back and sharing knowledge, skills, and experiences. Again, these are in keeping with Blackstock's BOL theory and the ecological framework, which state that knowledge only reaches maturity at the end of life when it is time to fulfill two of the most important functions of a lifetime: the passing of knowledge to children and mentoring the middle-aged as they transition to the next generation of

Elders (Blackstock, 2007). Indeed, recent studies conducted in First Nation (Ballard et al., 2020; Freeman, Martin, Nash, Hausknecht, & Skinner, 2020) and Inuit (Pace, 2020) communities support this finding in similar ways. These studies found that reciprocity and mutual support resulting from intergenerational relationships were key to maintaining health and wellness across the lifespan. Also, by teaching essential knowledge (often delivered through land-based, experiential learning), older adults were fulfilling the purpose for which the knowledge was given to them and the responsibility of passing on this knowledge as described in BOL theory (Blackstock, 2007). This practice of passing down essential knowledge through land-based activities strongly supports that Métis worldviews and practices are aligned with concepts outlined in Blackstock's ecological framework and BOL theory (Blackstock, 2007). This was identified as critical for Métis participants to feel well in who they are to support wellness across the life span.

Health and wellness among Métis older adults were also linked to the land as participants described the various places and spaces they moved within and around the community of Île-à-la-Crosse. These observed movement patterns revealed interesting findings as Métis older adults moved well beyond their "neighbourhood" boundaries and into geographical locations that extend beyond the community itself. These movement patterns are different than what has been observed among non-Indigenous older adults in other parts of Canada (Finlay et al., 2015; Peterson & Warburton, 2010). For these older adults, the extent of their trips tended to be smaller than Métis land-based movements. When I was conducting this study, it became clear that movement patterns of Métis older adults went well beyond community boundaries and, further, were strongly linked to places/spaces that held historical and intergenerational (familial) meaning (Macdougall, 2017b). These historical, familial, and intergenerational linkages to the land can also be described as attachments to the land. The recognition of Métis older adults' specific attachment to land means that, for Métis, the land is not understood as a simple commodity, but as a place imbued with historical and cultural meanings, which contribute to their health and wellness.

The spaces and places within the community and the surrounding land support wholistic (multidimensional) health and wellness. Interestingly, Western scholarly constructs of space and place align with these multidimensional aspects promoting aging well in place. In the discipline of geography, the concepts of space and place have been used to understand people's

relationship and interaction with their environment (Tuan, 1990), and more recently, to understand the role of land, places, and spaces in health and wellness among populations (Finlay et al., 2015; Ivsins, Benoit, Kobayashi, & Boyd, 2019; Moore, Carter, Hunt, & Sheikh, 2013). Places are essential in meeting the needs of people and the ease associated with the availability of resources in a place to satisfy a need explains the importance of a place. Thus, where people live significantly affects their health outcomes (Goodchild, 2015). Métis experiences and connections to the land are consistent with these concepts of space and place. Among the Métis, the way space and place are formed is inseparable from their historical experiences, aspirations, needs, and value systems. This resonates with Read et al.'s (2010) observation that in the view of Indigenous People, physical structures may not necessarily be considered as a "place." Rather it is the stories and activities with which they are inextricably associated that make places important. Some researchers suggest that positive interactions with the land lead to positive place attachment (Willox, Harper, Edge, et al., 2013) and enhanced balance between physical, emotional, spiritual, and cultural wellness (Ballard et al., 2020), all of which contribute to positive health outcomes. When Métis older adults feel grounded in the lands that link them to their ancestors and culture, this positive attachment to the land plays an important role in supporting positive health, wellness, and health outcomes.

We have established that Métis older adults access diverse and broad geographic areas in their everyday lives as a way to nurture wholistic health and wellness. Interestingly, colonial boundaries of the community, including areas that define Western-perceived places of land-based activities, are different and inclusive of a much smaller geographical land base than those that are accessed by Métis participants. This finding suggests that Métis conceptualizations of geographic boundaries and demarcation of territories of how far their community extends are not accounted for and rendered invisible within the Western delineation, policies, and map of the community. Consistent with this finding, McGaw, Pieris, and Potter (2011) note that Western conceptualizations of geographic boundaries are often dialectically opposed to Indigenous understandings, which are based on their relationship with the land as being nested in history, identity, and land use. Several participants told me stories about "life across the lake" as young people. The many references to the lake crystallized the finding that health and wellness weren't just within the community boundaries imposed by Western demarcation but extended across large expanses of land surrounding Île-à-la-Crosse. If we take the Western lens in using Île-à-la-

Crosse as the boundary for people to seek health and wellness, we will be missing a huge geographical aspect of what is critical for health and wellness over time and generations. Therefore, when developing health interventions, it is critical to recognize, acknowledge, and gather these narratives of the history of where people spend their time as young people and how they still access these lands for their health and wellness.

In the political landscape of Métis in Canada, land reclamation has been a huge priority. While I was in Île-à-la-Crosse, there were critical and important conversations where Métis leaders from across Canada came together to talk about the land. For example, I was invited to Métis Nation meetings in the community where land claims dominated the discussions. A timely contribution of this study is the evidence that the colonial boundaries of the community and ancestral boundaries are not aligned. Resolving this with Métis input is key to practising reconciliation through self-determination. This thesis provides evidence of what community-derived boundaries might encompass and, therefore, supports the work that the community is already doing on this front.

The multidimensional health and wellness benefits of being on or closer to the land discussed in this section are grounded in place. It is likely that these activities are difficult to replicate elsewhere, which have contributed to older adults developing a strong sense of belonging and attachment to their current landscape. Therefore, as Métis older adults leave their community, they require enhanced programming and services that support them in maintaining a connection to the land in these new environments. Also, the health and wellness benefits derived from the land illustrates the therapeutic benefits of landscapes (MacDonald et al., 2015; Wilson, 2003), which brings attachment and meanings to Métis older adults. While the health benefits of such landscapes have been acknowledged in the health geography literature, what is interesting in this study is the broadening of the analysis of these landscapes to include culturally specific dimensions in the Métis context, thus contributing to a better understanding of place, health, and wellness among Métis older adults.

7.3 Challenges to Accessing the Land

The health of Métis older adults is strongly enhanced through relationships with one another and the land. Unfortunately, when access to meaningful spaces and places is disrupted, there are often negative consequences for their health and wellness. Although Métis older adults spoke about adaptations and solutions to overcome these challenges, this section highlights the key

challenges in accessing the land described by participants, including geographical distances, industrialized activities, and land management practices. The findings from this study resonate with studies (MacDonald et al., 2015; Willox, Harper, Ford, et al., 2013; Willox et al., 2012) in other areas in Canada that point to the impact of similar stressors on access to Indigenous lands and ancestral places.

Geographic distance from the community to places of attachment plays a factor in older adults' ability to interact frequently with places of attachment. The spatial pattern of places of attachment presented in the study (Figure 6.1, p. 96) shows that most of the places identified are far from the community. As Métis older adults planned access to places and spaces on the land, they also had to plan how to transport themselves using cars, skidoos, quads, and motorboats. These rapid transportations provide the fastest way, and often the only way, to travel to and access the land from their permanent homes in the community. Many of the participants described the cost of various modes of transportation for accessing places as prohibitively expensive. In a community where many people have limited employment or live on social assistance, the cost of a reliable means of transport could be a barrier to accessing the land. The cost of these modes of transport means that older adults are restricted from continuing to live on the land as they aspire to. This situation is real, especially for older Métis adults with mobility impairments. Geographic distance disrupts their relationship with the land because they have needs for specific types of accessible transport. Therefore, Métis older adults with mobility impairments are less likely to obtain health sustaining benefits of places on the land, particularly if there are restricted options for transportation support. Transportation and access challenges impinge on the autonomy and agency of older adults (Wahl et al., 2012) to be on the land. This finding is consistent with other studies in some First Nations communities (example, Abu & Reed, 2018; Tobias & Richmond, 2014), where the cost of technology used to travel on the land was mentioned as a barrier to accessing the land and support their way of life, which has shaped their livelihood. This finding is important because it informs the development of policies and programs to support older people to age well in place. In addition to providing access to healthcare facilities for older adults, findings from this study also reveal that it is equally important for policy makers and healthcare practitioners to consider improving access to places on the land that support older adults to be well and age well in place.

Many participants indicated that they rely on other community members, including friends and relatives, to access places of attachment. This practice demonstrates strong reciprocal relationships (one of the 4R's (Kirkness & Barnhardt, 1991) in an Indigenous context), support in the community, and family structures, which community members have traditionally depended on for generations to support their health and wellness (Oosman et al., 2019). Traditional Métis communities comprise a system of reciprocal relationships and collective responsibilities to support each other (Macdougall, 2017a). This relational approach is consistent with one of the fundamental principles essential to the functioning of the BOL theory (Blackstock, 2011). Blackstock argues that it is through the interactions and relationships with others that knowledge and values within Indigenous communities are nurtured and passed on to the younger generations (Blackstock, 2007, 2011). This finding suggests that some older adults are using these values to mitigate the impact the cost of technology will have on access to spaces and places consistent with traditional needs and practices to being well. Additionally, these findings also mean that reciprocal relationships are critical to decreasing inequity in the opportunity to access ancestral places that support the health and wellness of older adults. Therefore, the erosion of the values and behaviours that underpin and support reciprocal relationships in the community may threaten the health and wellness of older adults. As such, it is important that support is provided to ensure that these values are maintained in the community. Some of the ways to do this include developing activities aimed at increasing interactions and communication among community members.

Industrialized activities on the land without the input of the Métis who use these lands for ancestral practices was identified as another factor challenging Métis older adults' access to their traditional land. When I was conducting this study, it became clear that for-profit activities such as clear-cutting/logging continue to threaten sacred lands, vegetation, wildlife population, and quality of surface water in the community. Participants mentioned that they had observed ongoing changes in the vegetation of the area. Also, drawing from the interviews and LU/LC analysis (Figure 6.3, p. 106 and Table 6.1, p. 100), it was revealed that the spatial extent of tree canopy decreased over the two time periods in favour of an increase in impervious surfaces, grass/low-lying vegetation, and bare soils. The increases in impervious surfaces and reduction in the tree canopy may have impacted the quality and quantity of water in the lake. The Saskatchewan provincial government continues to sell timber leases to large corporations that

have to engage in clear-cutting in Indigenous territories (Canadian Broadcasting Corporation, 2020). What is interesting is that these leases are negotiated without the adequate engagement of these communities. Additionally, climatic and weather changes as a result of human activities, including clear-cutting, were found to be negatively impacting how participants access resources to support their land-based activities. This observation is not exclusive to this community. Willox, Harper, Ford, et al. (2013) have indicated how land cover in communities has been destroyed through clear-cutting. This is known to have affected plants and animals, thereby impacting negatively on community members' ability to be on the land.

Along the same line, land management practices rooted in colonization were found to be not aligned with Métis perspectives and worldviews. Colonization in Canada has created all sorts of barriers to challenge access to the land. Government policies and regulations regarding land management impose restrictions on Métis people accessing the land for procuring food and cultural practices in a way that is not aligned with Métis worldviews, paradigms, and aspirations for wellness because they were developed without engaging Indigenous communities. These are restrictions imposed through federal and provincial policies; regulations are designed continuously to dispossess Métis people from their traditional land by limiting access. For example, in Saskatchewan, the Department of Natural Resources (DNR) implements the government's policies and regulations on northern resources management practices such as administering harvesting permits and quotas, open seasons for harvesting resources, and a trappers' program. In addition, the department is responsible for demarcating trapping blocks and Wildlife Management Zones (WMZ), which are enforced by conservation officers (Ministry of Environment - Government of Saskatchewan, 2019). Even though these policies are aimed at managing wildlife populations, the findings reveal that they are not aligned with Métis traditional conservation practices, thus preventing participants from accessing the land in the way they did in the past to practice their knowledge and pass it on to the younger generation.

Historically, Métis communities have endured assimilationist policies by the federal government, such as the road allowance and residential school (Andersen, 2014; Brizinski, 1993). These policies sought to systematically disconnect the Métis from their traditional lands. Many participants expressed fear of the landscape around the area where the residential school was located. These landscapes may trigger past trauma among older adults, thus challenging access, health, and wellness. This finding resonates with the concept of *topophobia* or "fear of

places" (Bowring, 2013; Tuan, 1974, 1990). Bowring (2013), for example, found increased levels of anxiety disorders in people who are exposed to topophobic landscapes. These findings are congruent with the observation by Wilson et al. (2011) that the health of Indigenous People in Canada continues to be impacted by colonial policies. Also, this finding indicates that the Métis notion of place is socially constructed and may arouse both positive and negative feelings as places of the past. Such places are critical in framing current understandings of health, wellness, and aging well among Métis older adults.

For people who described themselves as "from the land" and have developed a sense of attachment to their land, the loss of access to resources on their traditional lands can be devastating to their health and wellness. The findings of this study are aligned with the concept of *pimatisiwin* (the good life) to demonstrate Métis ways of understanding health and wellness. This concept focuses on the importance of Métis cultural identity for health and wellness. Living a good life is grounded in their ability to be on the land, practising culture, pursuing traditional activities, and passing on their knowledge to the younger generation. Consistent with this finding, M. A. Hart (2002) has described the universal values of the concept of *pimatisiwin* to include the collectivity of Indigenous identity. Living "the good life" is reflected in the teachings and ceremonies that happen on the land. In this case, the loss of important plants and animals, as well as inaccessibility to the land to participate in land-based activities, can affect the maintenance of "the good life." This can then result in an imbalance in their health and wellness (Blackstock, 2007). The teaching of Traditional Knowledge provides the needed *pimatisiwin* for community members. The presence of landscape changes and their associated negative impacts on Indigenous access to the land need to be addressed to ensure the wholistic health and wellness of Métis older adults in this community. Therefore, aging well intervention programs should support older adults to access the land to maintain their health and wellness. In the next section, I discuss how individuals and community have framed some strategies in accessing the land for health and wellness.

7.4 Perseverance to Maintain Wellness Through Culture

Métis people are strong survivors in the face of landscape changes. In spite of the challenges to accessing land, the findings of this study reveal the resilience of Métis people to continue to access the places and spaces on the land that support them to be well. Their ability to continuously adapt to the ever-changing landscapes around them demonstrates the idea of

ahkamîwowin (perseverance). Being proud Métis people means they can endure and survive to maintain health and wellness. Many of these places require extra time and energy for the community members to navigate ways to access the land to stay well. Consistent with these findings, others have highlighted how Indigenous People have historically adapted in the face of current and historical stressors (Abu & Reed, 2018; Turner, 2016). For example, Abu and Reed's (2018) study in Cumberland House, Saskatchewan, found that many local adaptation practices, including food sharing and U-picks, were initiated in the community in response to environmental changes. The findings of this thesis reveal that participants sought to overcome challenges in accessing important places, plants, and animals by instituting policies and activities such as community advocacy for land rights, cultural camps, wilderness camps, cultural week, community gardens, and leisure-time physical activities within the community. All were mentioned as important to enduring landscape changes to stay healthy and age well in place.

First, there are efforts within the community of Île-à-la-Crosse advocating for recognition and restoration of their land base (beyond community boundaries) and self-determination on these lands and about these lands. This advocacy is grounded in the traditional land use and occupancy of community members. These efforts are supported by MN – S and other Métis leaders from across Canada. The importance of the land to the health, history, culture, and tradition of Métis has informed their struggle over the years to restore their land base. Similar to other Métis communities in Canada, the community members of Île-à-la-Crosse are struggling to reaffirm their nationhood in Canada (Ens & Sawchuk, 2016). For these communities, the claim to ancestral lands and the right to use the resources of these lands are fundamental to this drive to nationhood (Ens & Sawchuk, 2016; Macdougall, 2017a). One of the ways of advocating for these rights is through the Métis Framework for Advancing Reconciliation. The framework agreement will give Métis from the community the right to occupy their traditional land and to engage in land-based activities, including fishing, hunting, trapping, and gathering plants and medicines. It also includes the rights to partake in decision-making regarding the use, management, and conservation of their traditional lands. These are important to support older adults to age well in place. The clearest example in the community is that through a similar negotiation, the ownership of South Bay Veterans' Park was transferred to the community in 2003 (Sakitawak Development Corporation, 2018). Many of the participants continue to access the park — a place located outside the community boundaries with strong historical and cultural

ties to the community that provides opportunities for community members to live on the land. A lot of the activities organized at this place lead to intergenerational interaction and transfer of knowledge to support health and wellness across generations (Blackstock, 2007). This observation is similar to what Ford et al. (2014) found among some Inuit communities, where, despite the drastic environmental changes, community members continue to problem-solve access to historical and ancestral places on their land to engage in their traditional activities. These are some of the things that many non-Indigenous people in rural and remote communities do not have to do to stay well and healthy, which further exacerbates health disparities and inequities.

Second, older adult participants value spending time on the land, sharing local (traditional) knowledge across multiple generations. *Michif* and/or Métis teachings are often passed down while doing or engaging with cultural activities on the land. The findings reveal that cultural week and cultural and wilderness camps allow Métis older adults to spend time on the land, practice their culture, and interact with other generations. Older adults who know how to hunt, trap, and set net, among other land-based activities, come together to show and share their knowledge and food. By enjoying these activities, older adults are practising their culture, language, sharing critical knowledge with the younger generation, and, at the same time, feeling connected to the land. This is an example of how older adults are assuming their roles and responsibilities in the face of challenges to pass on their knowledge. This suggests that Métis older adults are committed to creating opportunities for being and living on the land for themselves and for younger generations, in spite of the challenges that have been imposed on them through colonization and/or climate change. These are in keeping with the BOL theory, which places the responsibility on older adults to pass on their knowledge to the younger generation (Blackstock, 2007). Again, these activities are aligned with Métis-specific cultural teaching and learning. Thus, the role of older adults as transmitters of essential knowledge has meanings within the cultural understandings of relationships in the community and relationship to their traditional land (Jennings et al., 2020; Rowe et al., 2020). This is important for the younger generation to rediscover the importance of Métis culture and traditional practices that were once a critical aspect of their everyday lives.

Third, without the routine land-based activities to keep them busy and active, older adults use spaces and places within the community to uphold the structure of what they have been

doing for decades to stay active and healthy. The findings reveal that adaptation to market food and the transition from local food to market food is now shifting to reclaim practices (community gardens) from the past for health and wellness. The findings of this study show that there is a revival of the community garden and market garden where the community members are growing local community garden products. Additionally, the environment in Île-à-la-Crosse clearly provides leisure-time physical activity options, including lower impact walking and biking (in the case of older adults who were more mobile). Métis older adults talked about the importance of community gardens and leisure-time physical activities for their wholistic health. Consistent with these findings, Nettle (2014) has highlighted how community gardening sustains several aspects of the health and wellbeing of older adults from being physically active through land preparation, planting, and maintaining their garden while fostering a stronger sense of attachment, belonging, identity, and autonomy. The health benefits older adults derive from these activities capture the complex interplay of individual and collective agency and factors linked to all four domains (physical, cognitive, emotional, and spiritual wellness) of Blackstock's BOL-based ecological framework (Blackstock, 2007). Further, these activities are associated with increased social connectedness highlighting the networking, interactions, and social support they receive from other community members, suggesting that community gardens and leisure-time physical activities promote intergenerational interactions, which is critical to their health and wellness (Blackstock, 2007, 2011). These findings support the role spaces and places within this northern Métis community can play in supporting the health and wellness of older adults similar to what they obtain from the land.

In conclusion, the adaptation strategies discussed so far reveal a dynamic mix of modern and traditional practices (Lutz, 2008) to achieve a balance in wholistic health and wellness. As Dr. Blackstock argues, "culture is not static. It is meant to change, but those changes must be made with due attention to the ontology underlying the practices so as to not disrupt the basic tenets of a society" (Blackstock, 2019, p. 858). The community advocacy and changes participants have made to the existing cultural practices demonstrate the flexibility and perseverance of Métis older adults as individuals who can reclaim and borrow norms, values, and practices to age well in their changing landscape. These have led older adults to stay healthy and share their language, food, and land-based practices. All of these are part of being Métis. The ability of older adults to make these changes contributes to satisfying their need for maintaining

their autonomy, health, and wellness (Wahl et al., 2012). The findings support the need for Métis older adults to be involved in informing local adaptation planning to support aging well.

7.5 Finding the Middle Ground: Breath of Life and Person-Environment Interchange

Grounding this project within Indigenous theory and framework was critical to the emergence and honouring of Métis worldviews. This section presents a discussion of what I consider important to contribute to the discussion on BOL and how we might decolonize PEI so that it can be applied safely in an Indigenous context.

As I think about how my study can contribute to the discussion on BOL theory, I recall that during my time in the community, there were conversations with Elders and other older adults about land dispossession (occurring both directly and indirectly) and the importance of having access to the lands which have traditionally supported them to be well. Elsewhere Dr. Blackstock has advanced the BOL theory and Aboriginal ecological framework (Blackstock, 2019). A driver for Dr. Blackstock advancing this framework is equity and justice. She argues for "equitable distribution of resources as a mechanism to achieve balance" (Blackstock, 2019, p. 858). The principles underlying this include cooperation, inclusion, collaboration, equal access and opportunities for all (Blackstock, 2019).

This advancement is vital in the context of this thesis. Justice and equity are considered as a critical determinant of Indigenous People's health (Greenwood et al., 2015; Richmond & Ross, 2009). There is Indigenous health literature connecting positive health outcomes to justice and equity in Indigenous communities (Richmond, 2015; Richmond & Cook, 2016). On the other hand, injustice and inequities have been identified as the key to poor health outcomes in many Indigenous communities in Canada (Greenwood et al., 2015). In this thesis, justice refers to equity and fairness in access to their traditional land, including land-based resource distribution, to reduce the inequities in health (Richmond & Ross, 2009). It is also founded in the values of inclusion, collaboration, and self-determination on and about Métis traditional lands, including the right of Indigenous People to their traditional lands. Indigenous People have the inherent right to their traditional land to maintain their cultural lifestyle of hunting, trapping, fishing, and gathering plants and wild food (United Nations General Assembly, 2007), which is critical to their health and wellness.

For example, unequal participation in political decisions that govern Indigenous People has impacted negatively on their health and wellbeing (J. Reading, 2009). Similarly, the findings

of this study revealed that unequal participation in industrialized activities and land management practices poses a barrier to rightful access to the land. Most of these activities and practices were determined to be at a variance with Métis Traditional Knowledge, practices, and collective responsibility to one another and the land. Métis traditional activities and practices aim to ensure sustainable ecological diversity and a balance in wholistic health and wellness (Blackstock, 2011, 2019). Blackstock (2019) argues that it is important to note that Indigenous epistemology moderates their relationships with their traditional lands to safeguard a balance in health and wellness.

Blackstock's BOL theory and her Aboriginal ecological framework (Blackstock, 2007) overlaid with Wahl and Oswald's PEI framework (Wahl & Oswald, 2010) provide an important conceptual lens to understand Métis older adults' relationship with their land and their perceptions of the influence of space and place in aging well. The BOL theory emphasizes that humans are inseparable from the environment and from human existence over time (Blackstock, 2007, 2019). With the "world" at the core, Blackstock's (2007) BOL-based ecological framework can be overlaid in certain places with Wahl and Oswald's (2010) framework. This overlay contributes to re-framing and embedding the PEI framework within the principles and concepts of the BOL-based Aboriginal framework, making it appropriate for application in Indigenous context. This approach supports the health and wellness of Métis older adults while simultaneously supporting reconciliation and decolonizing research practices. In applying a decolonizing approach to this research, it is important that I consider how this Western framework can be applied in culturally appropriate ways that support and honour the Indigenous knowledge systems (Smith, 2012).

This study has revealed some inherent divergences of PEI framework from the BOL theory and Aboriginal ecological framework, including (1) assuming a unidirectional relationship with the environment; (2) not considering aging well from a wholistic perspective; and (3) showing a weaker relationship between community members. These divergences render PEI ineffective and incomplete for it to be used on its own in an Indigenous context to enhance understanding.

Reciprocity and reciprocal relationships required within the BOL theory are not present in the PEI framework, as the framework considers only a unidirectional relationship between older adults and their natural environment — the ability of older adults to use the environment to

age well. It focuses on the individual and aims at fulfilling individual wants, needs, and rights without understanding the interconnections of all things. BOL theory fills this gap, emphasizing the importance of the reciprocal relationship with the land (Blackstock, 2007, 2011). Consistent with this, the findings from this study showed that there exists relevant, respectful, responsible, and reciprocal relationships (the 4Rs in Indigenous context) (Kirkness & Barnhardt, 1991) between older adult participants and their lands where participants believed that if they look after the land, the land will, in turn, look after them. An imbalance within these relationships will impact negatively on older adults' health, wellness, and their ability to age well.

Another notable point of divergence is that the PEI does not consider the health and wellbeing of older adults from a wholistic perspective — physical, emotional, spiritual, and cognitive. The findings showed that for the Métis, older adults derive wholistic health benefits from their land. The land is where multiple dimensions of realities coexist in a wholistic and interdependent world and are not separated from one another (Blackstock, 2007, 2011). These relationships are shaped by space and place where they occur to achieve a balance (wholistic health and wellbeing). PEI framework is, to a larger extent, segmented and situated in a limited scope of space and time. Fig. 7.1 recognizes older adults' relationships and interactions with their natural environment contributing to their health, wellness, and aging well. The critical findings of intergenerational relationships and the transfer of essential knowledge are essential because they provide the historical context in which land-based practices, experiences and relationships unfold. Some of these practices were found to be important to the resiliency and adaptation of older adults to age well in place. Thus, in this context, the past, present, and future become mutually influencing in their health and wellness.

In an effort to finding middle ground and synergies, while privileging the Métis worldview, both theoretical frameworks become important. This is consistent with the practices described under the concepts of Two-Eyed Seeing (C. Bartlett et al., 2012) and ethical space (Ermine, 2000, 2007). These concepts describe a movement away from research approaches that dominate Indigenous knowledge to approaches where Indigenous and Western knowledge can coexist. In practice, these concepts employ a decolonizing approach to research, which includes Western knowledge production while supporting cultural renewal. It is when we are using both knowledge systems together that we find the greatest benefits for all (C. Bartlett et al., 2012; Ermine, 2000). Thus, finding a middle ground in both frameworks is critical to having an

expanded view of Métis older adults' relationship with their land. This new framework embraces the value of Métis ancestral knowledge in not only identifying how the natural environment can shape the dimensions of health and wellness but also the culture and context of reality, providing a mechanism to restore balance and wellbeing to a community. The successful application of this new framework will suggest that it is not enough to isolate Western-based intervention programs and services void of the culture and context. Even though this framework was developed from Métis perspective, it may be useful in other Indigenous cultures to inform aging well landscape research.

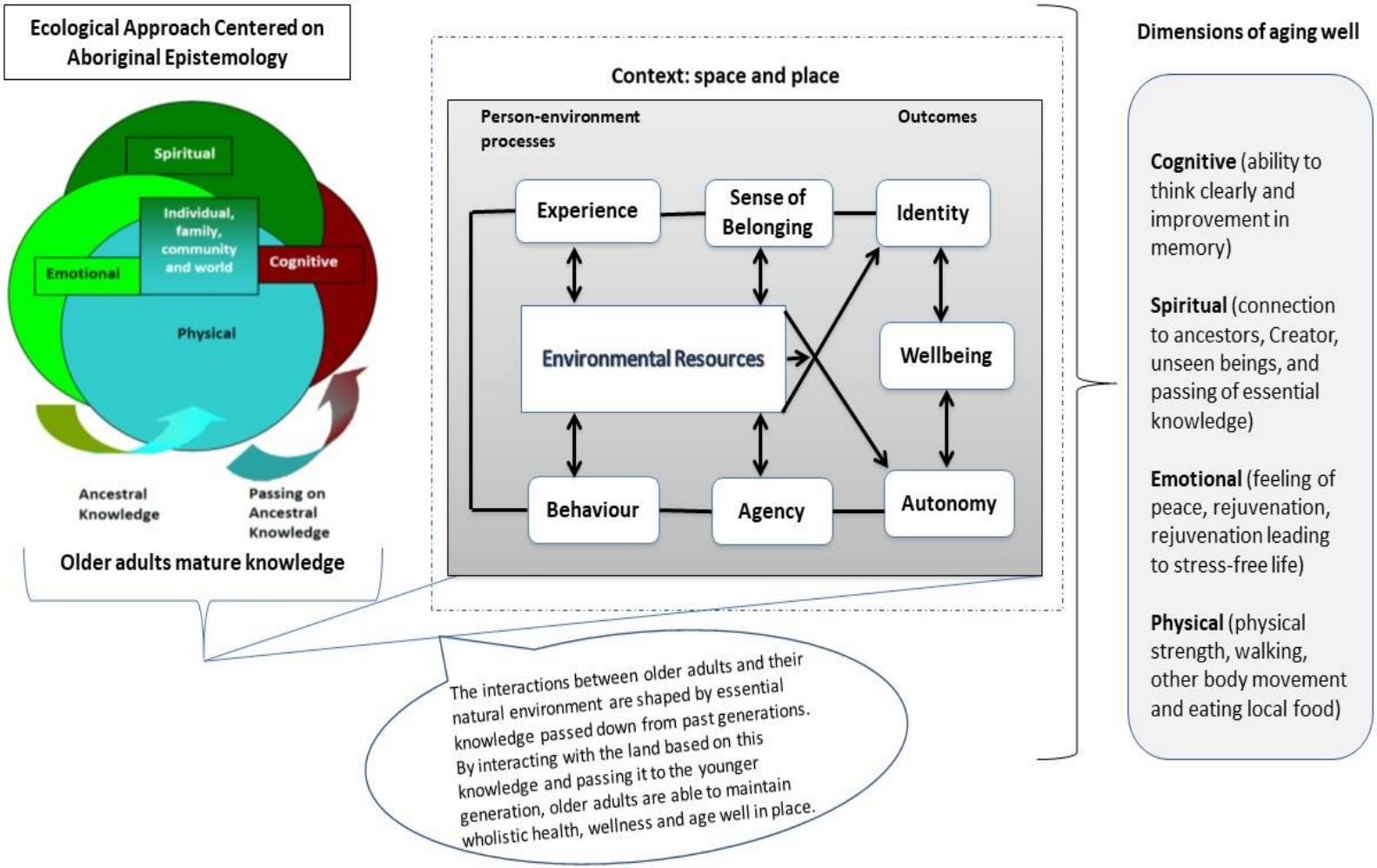

Figure 7.1. Blackstock's (2007) BOL-based ecological framework with Wahl and Oswald's (2010) PEI framework.

7.6 Reconciliation in Research: CBPAR, GIS, and Indigenous Knowledge

In this study, CBPAR facilitated engaging the community as partners and the bridging of Indigenous and Western knowledge systems to inform and understand the influence of geography of space and place on aging well. For example, bridging of Indigenous knowledge and GIS revealed that Indigenous knowledge can be used as evidence to legitimize a Western method in an Indigenous community. CBPAR approach provided an opportunity to privilege Indigenous knowledge above Western knowledge, thus reflexively informing and expanding the ways in which we think about GIS data in the context of a Métis community. What is interesting was that as older adult participants talked about changes occurring on the land (vegetation), the GIS revealed similar results. This suggests that we need to listen to the essential knowledge and teachings that are passed down between generations as well as the observations that older adults maintain as knowledge, which is within their own practice of research. Again, recognizing the value of Métis ancestral knowledge and respecting their relationship with their land to inform our thinking about their natural environment are steps policy makers can take toward reconciliation. It also demonstrates how two knowledge systems can be brought together to create new knowledge to understand place-based experiences and aging well. This reflects the concept of Two-Eyed Seeing described earlier in this thesis, where Indigenous knowledge and Western science can come together to enhance understanding (C. Bartlett et al., 2012). This is also in line with reconciliation in research where Indigenous knowledge is informing a Western method.

Métis understanding of space and place is founded in their stories and experiences on the land. While physical interactions between the older and younger generations are vital for storing and passing these stories, this study provides evidence of the potential for GIS technology to store, reclaim, and teach Métis stories of the land, and privileging Métis older adults' voices within the maps that are generated. GIS offers a framework to document and store Indigenous knowledge in a culturally appropriate and meaningful way that is congruent with decolonizing methodologies (Smith, 2012) because it locates stories to the specific places where they occur. The technology facilitated the mapping of the ancestral stories and experiences of places while maintaining a relationship with their traditional land. The maps created with stories embedded in them can serve as a conduit for sharing ancestral knowledge to support health and wellness, as revealed by the findings of this study. Mapping places and knowledge could advance the transmission of ancestral knowledge across generations. It will also support the maintenance of

cultural continuity as the knowledge that was once disrupted is passed down to other generations. Thus, in order to practice reconciliation, GIS could be a tool that will continue to aid the passing of essential knowledge to the next generation when the Indigenous worldview guides it.

By transferring essential knowledge, Indigenous communities may further their renaissance and repossession of essential knowledge to promote health and wellness across generations (Blackstock, 2007). However, there is the need to ensure that the community maintains control and ownership of the knowledge produced in these maps as given the possibility for cultural appropriation and misuse by outsiders (Jennings et al., 2020). Therefore, the town council of this community will be vital in identifying where the maps will be kept in the community to facilitate the transfer of knowledge produced in these maps.

7.7 Conclusions

Several conclusions can be drawn from the present study: (1) the natural environment is part of Métis older adults' sense of place, contributing to aging well in place; (2) places of attachment for Métis people are often beyond Western community boundary constructs; and (3) geographic stressors pose challenges to Métis health, wellness, and aging in place that require continual problem-solving to overcome. First, this study provides a small start to investigating older adults' place-related health and wellness, focusing on their land. Through the lens of BOL and PEI, the findings revealed that attachment to specific places and spaces on the land were linked to perceptions of wholistic health and wellness. The land supports their culture and traditional practices and represents the means through which Métis have come to know their world and understand their environment. The findings from this study demonstrate the importance of place-based approaches to future health and wellness interventions for older adults to promote aging well in place. Also, most of these places of attachment do not align with Western boundaries. This finding is vital to Métis land reclamation that has been a huge priority in the community.

Even though older adults have a strong relationship with their traditional land, this study points to some stressors that pose challenges to Métis health, wellness, and aging in place that require continual problem-solving to overcome. The findings of the study also revealed that the stressors continue to challenge older adults' access to their traditional lands and participation in land-based activities with negative impacts on physical, emotional, cognitive, spiritual, and social health and wellness. Beyond demonstrating how the various stressors impact health, wellness, and aging well, this thesis also provides a new perspective on how Métis older adults

can persevere, endure, problem-solve, and adapt to the environmental and socio-political changes to age well in place. Significantly, the study revealed how long-standing traditional and cultural practices in the community of Île-à-la-Crosse are used by older adults for their health and wellness. Thus, this thesis supports the view that Indigenous traditional practices are fundamental to their adaptation abilities for their health and wellbeing (Abu & Reed, 2018; Ford et al., 2016). As such, Indigenous People should be considered when making decisions concerning their health, particularly in the context of health programming aimed at adaptations to landscape changes to support aging well in place.

7.8 Contributions and Significance

The thesis contributes to both the theory and method for aging well and landscape research. Theoretically, this thesis has proposed the addition of justice as one of the principles underlying the BOL theory (Blackstock, 2007). The addition contributes to advancing an understanding of aging and landscape research in Indigenous communities, which have received little attention in the Indigenous health literature. Additionally, the results of this study are consistent with many components of the BOL theory and Aboriginal ecological framework (Blackstock, 2007) and can also inform the PEI framework (Wahl & Oswald, 2010). The findings of this study contribute to re-framing and embedding the PEI framework within the principles and concepts of BOL theory and ecological framework. In turn, this revised Western framework contributes to advancing an understanding of how a Western aging well framework can be informed by, and applied to, an Indigenous context, ensuring respect and relevance to Indigenous communities.

Methodologically, this thesis contributes to CBPAR by demonstrating how non-Indigenous (newcomer) academics can appropriately engage and collaborate with Indigenous partners to build trust and work across cultural and knowledge divides. The thesis also contributes to how we can bring together Indigenous and Western knowledge systems to create new knowledge that is meaningful to the Indigenous communities. The innovation here is the way spatial interviews were used to bridge Métis Traditional Knowledge and GIS and applied to understand the geography of space and place and its influence on aging well among Métis older adults. Along the same line, this thesis demonstrates creative and innovative ways to advance the practice of reconciliation, where GIS could be used as a tool that will allow the passing of essential knowledge to the next generation when guided by Indigenous worldviews to ensure health and wellness across a life span. Métis Traditional Knowledge is important for supporting

health and wellbeing across the life span. An important health issue for Métis older adults is how their knowledge will be transferred to the younger generation. The present study may help facilitate this by providing maps of places integrated with Métis stories and narratives. One planned outcome of this project is to share these maps with the schools in Île-à-la-Crosse to enhance the sharing of Métis Traditional Knowledge between and across generations. This will, in turn, support health and wellness across generations in the community.

This research highlights the important role land plays in the physical, cognitive, emotional, and spiritual domains of health and wellness among aging Métis older adults. These are critical for health practitioners, policy-makers, and community leaders to consider as interventions supporting healthy aging in place are designed and implemented. These findings are also significant because they can inform regulations, policies, and decisions regarding land use. The findings in this study increase our understanding of space and place-related dimensions of aging well that can inform culture-based interventions and programming in the community to be applied/considered by healthcare practitioners and policy makers keep older adults connected to the land to support aging well among older Métis adults. For example, this study increases understanding of the health benefits of the land contributing to the attachment to place. These can help inform policies on Indigenous resource use and management. Additionally, findings of this research should inform ongoing land claims negotiations between the community of Île-à-la-Crosse and the Government of Canada, offering community leaders an important rationale for engaging with the government on land reclamation.

7.9 Future Research Directions and Implications for Community

In addition to the key findings, this study provides numerous opportunities for future research. First, this thesis has demonstrated that the land is a vital resource contributing to the health, wellbeing, and aging well of Métis older adults living in remote and rural communities. However, we have older adults moving out of this community to places that are more urban. Since these people are likely to have little to no contact with their traditional land, the question, therefore, is how do we compensate for the connection to the land for such older adults? This challenge has not received any attention in the aging research among Indigenous People. Hence, future research studies need to focus on finding new and innovative ways on how the land can contribute to aging well among older adults who move from their communities.

Second, the findings of this study indicate that Métis land-based activities and foods are a vital component of the health and wellbeing of older adults and are connected with a stronger attachment to place. The data presented in this thesis can be used by knowledge users, including the Mayor and Council, Sakitawak Elders Group, and *the Saskatchewan Health Authority*, to develop a land-based intervention program to support aging well in this community. Subsequently, future research could follow up on this intervention program to evaluate and monitor the long-term impacts of the program within a Métis context. In the Métis health literature, there is no such intervention or long-term follow up, which makes this a vital future research recommendation.

Third, in this study, theoretical frameworks are applied, resulting in key findings that are specific to the communities of Île-à-la-Crosse. Both BOL theory and Aboriginal ecological framework (Blackstock, 2007) and PEI framework (Wahl & Oswald, 2010) are broadly used to understand Métis older adults' relationship with their land, exploring their perceptions of the influence of space and place on aging well. However, we need to recognize that the tradition, culture, protocols, knowledge, and values of the Métis are different from other Indigenous People. Therefore, a natural progression of this work is the opportunity to test and apply the theoretical frameworks presented in this study to other Indigenous communities in Canada to examine the influence of their land on the health and wellbeing of older adults.

Finally, the success of the CBPAR approach in this project reflects how the approach can be used successfully with Métis older adult participants. The CBPAR approach facilitated collaboration and active participation of community members in the research process. It also allowed the collection of varied data to give a more comprehensive understanding of the research problem. It is vital to state that employing a CBPAR approach in Indigenous communities as an "outsider" was challenging, time-consuming, and involves commitment, especially in building trusting relationships. For researchers, considered as "outsiders" in Indigenous communities, this means learning from community members living and participating in activities in the community, building trust, and employing suitable methods and processes of engagement. The community engagement efforts used in this study are but some of the ways of making this commitment. Therefore, future research in other Indigenous communities could benefit from community engagement strategies in this study to ensure the active participation of community

members, which is fundamental to developing meaningful and respectful relationships with the community.

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APPENDIX A: DISTANCE FROM THE CENTRE OF THE COMMUNITY TO PLACES OF ATTACHMENT

Features	Distance in Metres	Distance in Kilometers
Cabin 1	10606.0205	10.6
Cabin 2	9768.83318	9.8
Cabin 3	24230.87557	24.2
Cabin 4	10164.13838	10.2
Cabin 5	22809.760229	22.8
Cabin 6	5024.524698	5
Cabin 7	14818.343038	14.8
Cabin 8	10823.025933	10.8
Cabin 9	8205.975619	8.2
Cabin 10	7663.949883	7.7
Cabin 11	22261.487226	22.3
Cabin 12	5231.278586	5.2
Cabin 13	19168.463475	19.2
Cabin 14	18274.313535	18.3
Average distance		**14**
Homestead 1	8688.513018	8.7
Homestead 2	2527.625453	2.5
Homestead 3	7158.670484	7.2
Homestead 4	6861.018679	6.8
Homestead 5	3640.121973	3.6
Homestead 6	1377.957968	1.3
Homestead 7	12006.31059	12

Features	Distance in Metres	Distance in Kilometers
Homestead 8	27901.741976	27.9
Homestead 9	26130.4899	26.1
Homestead 10	5751.333595	5.8
Homestead 11	17734.675437	17.7
Homestead 12	19721.241562	19.7
Homestead 13	21232.568789	21.2
Average distance		**12**
Trap Line 1	14055.990282	14.1
Trap Line 2	18674.959956	18.7
Trap Line 3	20352.354573	20.4
Trap Line 4	18422.241774	18.4
Trap Line 5	18262.270219	18.3
Average distance		**18**
Fishing Spot 1	7826.476385	7.8
Fishing Spot 2	11700.468289	**11.7**
Fishing Spot 3	6143.911333	6.1
Fishing Spot 4	7269.708736	7.3
Fishing Spot 5	29982.001886	30
Fishing Spot 6	14809.342293	14.8
Fishing Spot 7	18908.413311	18.9
Average distance		**14**
Hunting Ground 1	14055.990282	14.

Features	Distance in Metres	Distance in Kilometers
Hunting Ground 2	13148.734775	13.1
Hunting Ground 3	30606.637036	30.6
Hunting Ground 4	29171.300846	29.1
Hunting Ground 5	30268.429911	30.2
Average distance		**14**
Berry Pick Area 1	7005.584088	7
Berry Pick Area 2	13625.023413	13.6
Berry Pick Area 3	3596.525027	3.6
Average distance		**23**
Camping Spot 1	3987.497049	14
Camping Spot 2	13353.941882	13.6
Camping Spot 3	4357.886109	4.4
Average distance		**11**

APPENDIX B: COMMUNITY ENGAGEMENT DOCUMENT

Introduction

Indigenous people in many parts of the world, including the Métis populations living in Canada, regard the land in ways that are common to their own cultural experience, and different from the Western (non-Indigenous) perspective of land. Métis people have a strong history of living close to the land. For example, historically, they depended directly on the land for food (berries, gardens, fishing and trapping), health and wellbeing. Métis recognize the link between healthy land and the health of their people. Métis art tells about the connection between the Métis people and their land. They see themselves as belonging to the land and as one of the integrated elements with every aspect of their lives connected to it. The land has historically sustained every aspect of Métis lives, including their physical, spiritual, emotional and mental health. This way of life, however, is gradually being lost due to changes occurring on the land. Therefore, the land (environment) more directly impacts on their livelihoods and wellbeing, including their ability to age well.

The Project (What I want to do)

Looking at the important role the land plays in the lives of the Métis people, this project aims at exploring the perceptions of older adults on the influence of the land on aging well. This will be done in collaboration with the Métis community members of Île-à-la-Crosse.

Proposed Topic:

Les Michif Aski ~ Métis and the Land. Perceptions of the influence of space and place on aging well in Île-à-la-Crosse

What is the purpose of this project?

The purpose of this project is to explore, is to investigate Métis older adults' relationship with their land, exploring their perceptions of the influence of space and place in aging well in the Métis community of Île-à-la-Crosse.

The land: It includes living and non-living things, which occur naturally. Some examples include trees, lakes, rivers and vegetation. It provides the setting for everyday human activity. The land is considered as an important determinant of health and, at the same time, is key to wholistic health from an Indigenous worldview. It influences health in many ways. For example,

contaminants in the air, water and land have adverse effects on health, while having access to the land can lead to increased activity and lower blood pressure. In addition to these descriptions, this project will be shaped by the Métis descriptions and worldviews of their land.

What questions do I seek to ask in this project?

This collaborative research project will ask the following questions to achieve the main purpose set above:

How do Métis older adults perceive their land as part of their overall sense of place and wellbeing?

- What land-based resources promote Métis older adults' sense of place?
- How does being close to the lake, the bush and the land in general influence aging well?

Description

The land has been a strong determinant of the health of many people, including seniors. It provides opportunities to many individuals, including older adults, to increase control over and improve their health, prevent illnesses, diseases, and injuries. For example, the land contributes to the health of older adults through supporting healthy eating habits and exposure to nature to nourish their sense of wellbeing.

The main purpose of this research question is to identify and understand how the various ways through which the land sense of belonging and attachment to place as well as the health and wellbeing of older adults in Île-à-la-Crosse. This question will explore key issues related to Métis sense of place, as will be identified by community members.

This project will use interviews to obtain descriptions of place of attachment. Also, Geographic Information Systems (GIS) technology and interviews to help answer this question. GIS is a type of computer-based, smart mapping that will include the collection of many different types of data into the map, and then to ask questions of the GIS. In collaboration with our community partners, we will identify places in the community where seniors identify as places of attachment. These areas will be mapped if possible.

It is our belief that the knowledge gained under this question will inform community initiatives and support future community efforts related to interventions/programs or development that might support aging well. Additionally, capturing this information as part of a

map will help inform the community about where to locate future intergenerational health interventions/programs aimed at supporting aging well. These areas will be places where older adults will be transmitting their knowledge and skills to the younger generation in support of wellness and aging well for the future.

How information for this question will be obtained

Information for this question will be obtained through informal conversations and interviews (walking and sitting).

How has the land changed over time, and how do these changes impact on their ability to age well?

- How has the land changed over time?
- How have the changes affected key species and habitats?
- What other factors explain the changes occurring on the land?
- How do older adults perceive these changes to impact aging well?

Description

Environmental changes can bring about myriad human consequences. The health of people has been identified as one of the most significant indicators of the impacts of environmental change. For example, changes in the capacity of the community's ecosystems[25], such as the bush and lake, may be one driver of food insecurity and chronic conditions (such as obesity, diabetes, and high blood pressure) in some communities. These dimensions are not the only environmental impacts on aging well, but also the changes could have an impact on the mental health of people. It is believed that individuals are connected spiritually to "Mother Earth," and the belief of being alive with the spirits lends itself to positive mental health (Richmond, 2015). We need to think of the spiritual enrichment and the natural beauty that the bush and the lake provided in the past and compare it to the present? Are there any changes in how both the lake and the bush are able to provide these spiritual and emotional supports? How do these changes affect aging well in the community? These are some of the areas that this second research question will explore.

[25] This comprises living (animals, plants) and non-living components (air, water, soil) of the environment interacting together as a single unit.

The main purpose of this research question will be to explore the local ideas and concepts about aging well, particularly how the environment currently is, how it has changed, and the impacts of the environmental changes on aging well. The knowledge gained will support the emergence of new knowledge related to the role of the environment in the health of Métis older adults. Also, it will support community initiatives aimed at supporting aging well.

How information for this question will be obtained

Information for this question will be obtained through interviews and informal conversations, and GIS.

What strategies have Métis older adults used in order to age well in their current landscape, and how might these strategies differ from the past?

- How have the older adults adapted to their environment?
- What activities do adults engage in, and how do older adults perceive these activities as influencing their overall sense of health and wellbeing?
- Where do these activities take place, and are older adults consistent in where they chose to carry out these activities?

Description

Aging includes successive adaptation to environmental changes for a healthy life. These strategies are used to enable people to cope with changes occurring in the environment in order to survive. In many instances, these strategies can help prevent illnesses, injuries and even deaths among people, especially the vulnerable population such as older adults, while protecting the environment to nurture aging well for the future. Therefore, for the purposes of this project, we will refer to adaptive strategies as adjustments made by older adults in the community of Île-à-la-Crosse in response to actual changes to their environment. All human responses to environmental change qualify as adaptation strategies. For the purposes of this research question, these are strategies that seek to lower the risks posed by the negative health effects of environmental changes.

Throughout history, humans have been adapting to their environments. They do this by developing practices and livelihoods that they feel best fit their environment, and when the environment changes, their behaviour may change too. For example, in some of the preliminary

conversations with community members, they indicated that during the past summer, there were forest fires around the community of Île-à-la-Crosse. Not only were some older adults house-bound, but others also had to be evacuated from the community to prevent smoke inhalation. Other examples might include a more lasting cultural shift, such as improvising an artifact for spiritual healing. Are there things in the environment that were used for such healing, but are no longer there? How are older adults coping with the loss to obtain spiritual healing? These are some of the issues that will be explored extensively under this question.

However, there is a distinction between coping mechanisms and adaptive strategies – coping mechanisms are the short-term actions we take and decisions we make in responses to changes in land-based activities, while adaptive strategies are the long-term culturally ingrained responses we build into our ways of life and decision making processes when the environmental changes are more permanent. Our focus with this research question is to explore both the actual responses to the changes in the environment over time (i.e. coping strategies) and the modifications in socio-institutional and cultural practices (i.e. long-term cultural adaptations) that have helped secure older adults to age well. Coping mechanisms are more likely to emerge at the individual and household levels in the short term, whereas adaptive strategies, which are related to variables such as cultural values, emerge at community or group levels; hence, paying attention to the two kinds of responses helps to fully analyze the nature of the problem of environmental change and its impact on aging well, as well as the people's response to this change.

This research question aims at exploring the adaptive/coping strategies adopted by seniors in the community of Ille-a-la-Crosse to age well. The information derived through answering this question will valuable in informing community initiatives and support to prevent the threat of environmental changes to the health of seniors.

How information for this question will be obtained

Interviews (walking and sitting), informal conversations, and participant observation

Overall methods proposed

The study will combine semi-structured and spatial (sitting and walking) interviews, informal conversations, participants observation and GIS mapping. Semi-structured interviews are where the interviewer sits one-on-one with the participants for a chat. This will take place at the

location of their choice. Spatial interviews will be where the researcher joins participants for a sit-down or walk while they interact with a paper map and answer questions on the places they identify on the map. We intend to use the information shared through the interviews to gain insight into their different perspectives about how the environment, whether it be the lake, or bush, among others, supports or hinders aging well. The interview guide (the list of questions co-created with the community) will be open-ended in nature. It will allow community members to express themselves fully to the questions they will be asked.

GIS mapping is a means of capturing, storing, and analyzing information related to positions on the earth, on a computer. For instance, in this project, one can think of GIS as a tool to capture the places of attachment and a means of building in the words and ideas that they convey on a map. Community expertise will be integrated with GIS skills into mapping that will be meaningful for the community in order to support future planning and knowledge sharing. The maps could serve as a school-based resource in the community for multiple generations. These maps can also contribute to enhancing children's knowledge of aging in their community and provide a way to convey the wisdom of the older generation. Additionally, the maps could also serve as a resource for the Gabriel Dumont Institute in Île-à-la-Crosse for the delivery of their educational programs and services.

Knowledge transfer

The findings from this project will be shared with the community and the academic world using a number of approaches. At the community level, these may include: oral and poster presentation at community gatherings, reports and newsletter articles, and can be selected to fit what the community members see as being most useful. At the national and global levels, results and findings will be presented at conferences and published as journal articles, so that other researchers and Indigenous communities may benefit from this project. However, guidance will be sought from the community of Île-à-la-Crosse before pursuing these activities.

Potential research participants and recruitment process

This project will recruit 20-25 Métis seniors aged 55 years and older living in Île-à-la-Crosse. The selection criteria for the older adults will be based on participants being Métis, who have Île-à-la-Crosse as their home community and residence in the community. When a participant meets the inclusion criteria set, they will be approached indirectly through the community research

coordinators, who will provide a brief summary of the project. If they agree to join the study, the project will be explained to them more fully. Those who chose to participate in the project will also be encouraged to give the contact information of the researcher and the community coordinators to other people they know who fit the selection criteria, with a request to contact the researcher or community coordinators if they are interested in participating in the project. Through these recruitment processes, the sample for this project will be obtained.

APPENDIX C: SEMI-STRUCTURED/SPATIAL INTERVIEWS CONSENT AND INFORMATION FORM

Department of Geography and Planning

Project Title: *Les Michif Aski ~ Métis and the Land.* Perceptions of the Influence of Space and Place on Aging Well in Île-à-la-Crosse

This is a sub-project as part of the main project "*Wuskiwiy-tan! Let's Move! Aging well in a northern Saskatchewan Métis Community*," revealing experiences and aspirations of aging among Métis seniors.

Researcher(s): Boabang Owusu, Graduate student, Department of Geography and Planning, University of Saskatchewan. Telephone: (306) XXX-XXX, email: b.owusu@usask.ca

Supervisors: Dr. Sarah Oosman School of Physical Therapy, Telephone: (306) 966 8260 email: sarah.oosman@usask.ca and Dr. Paul Hackett, Department of Geography and Planning, Telephone: (306) 966-2919, email: Paul.hackett@usask.ca

Project co-lead

Dr. Sylvia Abonyi, Department of Community Health and Epidemiology, Telephone: (306) 966-2194, email: sya277@mail.usask.ca

Community co-leads

TJ Roy, Community of Île-à-la-Crosse, Telephone: (306) XXX XXX, email: tjr.cbo@sasktel.net

Liz Durocher, Community of Île-à-la-Crosse, email: lizdurocher@hotmail.com

Purpose(s) and Objective(s) of the Research:

- Our team, which includes Île-à-la-Crosse community members and researchers from the

Universities of Saskatchewan and Regina, is learning about the experiences of growing old in your community. As part of the project, we will be spending time in Île-à-la-Crosse to learn about the role of the environment in aging well. We hope to provide information to the Town Council, the health care system, and others working with people here to support and build programs and services, with the goal of helping people to age well. You may have participated in other parts of the aging research. In this interview, we would like to learn about how you are connected to the land, as well as to clarify how the land and things you do on the land influences aging in your community now and in the future.

Procedures for semi-structured interview:

- You are being asked to participate in an individual interview to tell us about how you are connected to the land in Île-à-la-Crosse, SK; how the land and things you do on the land influences aging in your community now and in the future strategies and actions you use to age well and to improve your environment in order to promote healthy aging. We expect interviews to take about 1-2 hours.
- The interviewer(s) will ask for your consent to record audio from the interview. The audio recording helps us to keep an accurate record of what you said. We will not use the recording for any other purpose unless you would like us to keep it in a community archive as part of the history of the people of Île-à-la-Crosse. You may also request a copy of the recording for personal use. On the other hand, you may ask to have the recording device turned off at any time. We will ask if we may contact you over the next year to see if you are interested in participating in other parts of this study. All of these options will be presented for your consent at the end of this form.
- If you wish, you will be provided with a typed transcript of your interview for your review and approval.
- The interviewer may also take notes, which will be seen only by the researchers, and destroyed once the study is complete.
- We will ask if we may contact you to ask if you are interested in participating in other parts of this study.
- At the end of the interview, we will review this form with you again to confirm your

consent.

- If you have any questions or concerns at any time, please contact Boabang Owusu or any of his supervisors.

Funded by:

- The funding for this project comes from the Canadian Institutes of Health Research (CIHR).

Potential Risks:

- There are no known or anticipated risks to you by participating in this research.

Potential Benefits:

- There are no immediate and direct benefits to you for participating. We will include the ideas and experiences shared in this discussion in the information this project will provide to Town Council, representatives from the health care system, and others working with people here to support and build programs and services to help people here and in other communities like yours, to age well.

Compensation:

- You will receive a $25 honorarium at the end of the interviews (semi-structured interview and spatial interviews) in appreciation for your contribution.

Confidentiality and Right to Withdraw:

- Île-à-la-Crosse, SK is a small community, and you may know other individuals that participate in this study. As well, it is possible that you may be identifiable to other people on the basis of what you have said, even if quotes are rephrased and stripped of information that might directly identify you. Therefore, anonymity may be difficult to preserve.
- Sometimes participants want to have their contributions recognized by having their names included with a quote or any other description of what they said. You will have the opportunity to choose whether you would like the project to use your name or a made-up name.

- Any information collected with identifying information will be stored on password-protected computers. Paper files will be stored in a locked cabinet for up to five years. Consent forms will be stored separate to data.
- Your participation is voluntary, and you can answer only those questions that you are comfortable with.
- You have the right to withdraw or quit the study until such point as the data you have contributed has been integrated into the analysis (about 2 months after your interview). If you elect to withdraw before this time, all data pertaining to your participation will be destroyed -electronic files deleted, and paper materials destroyed.
- Whether you choose to participate or not will have no effect on your current relationship with the researchers.

Follow up:

- Results from this study will be communicated to community members in posters, newsletters, and presentations.
- If you have any questions about the results, please contact the researchers listed on page 1

Questions or Concerns:

- Contact the researcher(s) using the information at the top of page 1
- This research project has been approved on ethical grounds by the University of Saskatchewan Research Ethics Board. Any questions regarding your rights as a participant may be addressed to Research Ethics Office ethics.office@usask.ca (306) 966-2975 or **(888) 966-2975**.

Consent:

Check only those that apply:

__ I had an opportunity to ask any questions I had about my participation, and they were answered to my satisfaction.

__ I hereby agree to participate in the interview as described to me in this form.

__ I grant the researcher permission to make an audio recording of my interview for the

purpose of record keeping.

__ I wish to have a copy of the recording for my personal use.

__ I wish to remain anonymous. Please use a pseudonym for any quotes or discussion of what I said in this interview.

__ I do not wish to remain anonymous. Please use my name when you quote me or describe anything I said in this interview.

__ I wish to have a copy of the recording placed in a community archive as part of the history of the people of Île-à-la-Crosse.

__ I would like a chance to review the full transcription of my personal interview in this study with the opportunity to add, alter, and delete information from the transcript as appropriate.

__ Yes, you may contact me to ask if I am interested in participating in other parts of this study.

__ A copy of this Consent Form has been given to me for my records

Semi-structured interview consent

_____	_____	_____
Name of Participant	*Signature*	*Date*

_____ _____

Researcher's Signature *Date*

Spatial Interview Consent

Procedures for Spatial interview

- You are being asked to participate in an individual spatial interview to help record locations of important places you mentioned during the first interview. We expect interviews to take about 1-2 hours.
- If you can, we will take a walk through the community to talk about these locations. Otherwise, I have a map of the community that we can interact with to capture positions of such locations you identify as important.
- The interviewer(s) will ask for your consent to record audio from the interview. The audio recording helps us to keep an accurate record of what you said. We will not use the recording for any other purpose unless you would like us to keep it in a community archive as part of the history of the people of Île-à-la-Crosse. You may also request a copy of the recording for personal use. On the other hand, you may ask to have the recording device turned off at any time. If you wish, you will be provided with a typed transcript of your interview for your review and approval.
- The interviewer may also take notes, which will be seen only by the researchers, and destroyed once the study is complete.
- At the end of the interview, we will review this form with you again to confirm your consent.
- If you have any questions or concerns at any time, please contact Boabang Owusu or any of his supervisors.

_____ _____ _____

Name of Participant *Signature* *Date*

_____ _____ _____

Researcher's Name *Signature* *Date*

Participant Contact Information (for sharing results, and for follow-up about future study activities):

Name_____

Street Address_____

Postal Code_____

Home Phone Number_____

Cell Phone Number_____

E-Mail Address_____

APPENDIX D: ETHNOGRAPHIC CONSENT

Department of Geography and Planning

Project Title: *Les Michif Aski ~ Métis and the Land.* Perceptions of the Influence of Space and Place on Aging Well in Île-à-la-Crosse

This is part of the main project, "*Wuskiwiy-tan! Let's Move! Aging well in a northern Saskatchewan Métis Community*"

Researcher(s): Boabang Owusu, Graduate student, Department of Geography and Planning, University of Saskatchewan. Telephone: (306) XXX-XXX, email: b.owusu@usask.ca

Supervisors: Dr. Sarah Oosman School of Physical Therapy, Telephone: (306) 966 8260 email: sarah.oosman@usask.ca and Dr. Paul Hackett, Department of Geography and Planning, Telephone: (306) 966-2919, email: Paul.hackett@usask.ca

Project co-lead

Dr. Sylvia Abonyi, Department of Community Health and Epidemiology, Telephone: (306) 966-2194, email: sya277@mail.usask.ca

Community co-leads

TJ Roy, Community of Île-à-la-Crosse, Telephone: (306) XXX XXX, email: tjr.cbo@sasktel.net
Liz Durocher, Community of Île-à-la-Crosse, email: lizdurocher@hotmail.com

Here we have drafted a few possible ethnographic scenarios for which we might seek consent to capture information in field notes or on visual or video images. These scripts will be used (but may not be expressed verbatim), ensuring that the following key points are part of what they do say: (1) identify themselves as a project team member with a professional interest in what is

being shared; (2) informed consent to proceed in a professional (rather than personal & private) capacity is obtained, and; (3) an opportunity to withdraw is explained. The team will practice these, but we would expect that the details of the script would be adjusted to the circumstance. Should consent for inclusion as project information not be given, the researcher will be free to engage with the community member in a personal and private capacity and make it clear that they are doing so.

Scenario: Invited to participate in an activity (e.g. beading, boating, hunting/trapping, fishing, berry picking, dance)

Thanks so much for allowing me to share in this experience and learn from you. You may know that I am working with a team from Île-à-la Crosse and the Universities of Saskatchewan and Regina, learning about the experiences of growing old for people in this community.

As we do_____ today, I may see or hear something that could be helpful to that work. Is it OK with you if I include comments about those things in notes that I sometimes write up at the end of the day as I think about what I have experienced that could be important for the project? I am happy to share those notes with you if you want to see them. We would not use your name in anything the project team shares with others –unless you would like us to do that. Is it OK with you if I take pictures or short video clips? I will ask you each time before I take a picture or video if it is OK, or you can let me know when it is OK. If we would like to use any of the photo or video bits in the project, I will show you which ones and ask for your permission first.

Field notes: If the answer is 'no': OK. Thanks for considering this. I appreciate the opportunity to share this experience with you in a private way.

Photos or video: If the answer is 'no': OK. Thanks

Project personnel will be advised that in this case, no images may be captured for personal use either unless expressly invited by the community member for this purpose.

Scenario: Casual conversation

Wow, that (story, experience, perception, idea) fits really well with a project I am a part of. You may know that I am working with a team from Île-à-la Crosse and the Universities of

Saskatchewan and Regina, learning about the experiences of growing old for people in this community. As part of that work, I put things I have learned that I think are important for that work in notes I write. Would it be OK with you if I write what you just shared with me in those notes as well? We would not use your name in anything the project team shares with others – unless you would like us to do that.

If the answer is 'no': OK. Thanks

Scenario: Someone is doing something we would like to photograph for the project. The individual(s) would be identifiable.

Hi! What you are doing here fits really well with a project I am a part of. You may know that I am working with a team from Île-à-la Crosse and the Universities of Saskatchewan and Regina, learning about the experiences of growing old for people in this community. Sometimes pictures and videos show an important idea better than words can tell it. Is it OK with you if I take pictures or a few short video clips? If we would like to use any of the photos or video bits in the project, I will show you which ones and ask for your permission first.

If the answer is 'no': OK. Thanks

Project personnel will be advised that in this case no images may be captured for personal use either, unless expressly invited by the community member for this purpose.

APPENDIX E SEMI-STRUCTURED INTERVIEW GUIDE

Opening comments (following consent process and agreement to participate)

As you know from the consent form we just reviewed together, the purpose of this interview is to hear about how the land, and the things you do on the land, impact aging in your community now and in the future. While I have some ideas about some of the questions, I would like to explore with you. I invite you to share whatever you think is important for me to know about how the land and things you do on the land influences aging in your community now and in the future. This will help people in this community have a good aging experience.

1. How long have you been living in this community?
2. What are some of your memories of being on the land?
3. What types of activities or experiences do you remember doing on the land? Who taught you about these activities/experiences with the land?
4. Is the land important in your life? Why? Why not?
5. How does being on the land make you feel?
6. What things on the land make you happy? Do you have special places that you like to spend time? And why?
7. What do you remember about things on the land that help you feel well?
8. Where, in the community, do you feel well and like to spend time?
9. Have you ever felt out of place in the community? Where will you feel out of place? And why?
10. Do you see any changes occurring on the land over the time you have lived here? If so, what are they, and how do you feel about these changes, and how do the changes impact your health?
11. Has your experience of living on the land changed much over time? Can you tell me more about how some of these changes influence you and how you feel?
    - As the land has changed, how have you had to change?

12. Do you do different activities now than when you were younger? If so, what activities and why?
13. Do you contribute to the improvement of the land? / Do you feel you can contribute to improving the land? OR What do you feel your role is, if any, in improving the land and/or the community?
14. Do you think seniors are involved in community activities or volunteering on the land to promote a feeling of belonging?
    - Can you tell me about the kind of activity you participate in to improve your environment?
    - How often are they conducted (*weekly, monthly, yearly, by season*)
15. What activities are you involved in the community that makes you feel happy? Do any of these activities take place on the land? Or in the community (where in the community)?
16. Are there any land-based activities you would like to do that would make you feel happy or feel that you belong to this community?
17. How do you predict the land to be in the future to promote aging well?
18. Is there anything that you want to add?

Closing:

Thanks so much for your time and your thoughts. Before we finish today, I would like to go back to the consent form briefly. Now that we have been through the interview and you know what you have shared with me, I just want to go back through the sections we checked off and see if you still consent in the same way as before we started. It's perfectly OK to change your mind on any of this. [At this point, confirm all the check box decisions with the participant].

APPENDIX F: SPATIAL INTERVIEW GUIDE

Opening comments (follow up to an in-depth interview)

Thank you for agreeing to participate in the spatial interview as part of the research project. As you know, from the consent we just reviewed together, I am working with a team from Île-à-la Crosse and the Universities of Saskatchewan and Regina learning about the role environment in healthy aging.

The purpose of this interview is to help record locations of important places you mentioned during the first interview. It is a follow up from our last conversation to seek clarity on positions of these places to enable me to map out. The questions are different from the questions in the first interview because we will be interacting with a map to locate the places we talked about the last time.

1. Can you show (on the map) where you hang out and spend most of your time?
2. How long have you been visiting this place?
    - Do you still visit this place? If so, how often?
    - Is there anything stopping you from visiting this place?
3. What is it about this place that makes you go there?
4. Are there any particular times or seasons more often than others that you visit this place?
5. How do you feel when you go there?
6. Do you usually go to this place on your own or with other people?
7. What type of activity do you do at this place?
8. Do you think this place needs to be protected? Why? And what is the best way to protect it?
9. Is there anything that you want to add?

Closing:

Thanks so much for your time and your thoughts. Before we finish today, I would like to go back to the consent form briefly. Now that we have been through the interview and you know what you have shared with me, I just want to go back through the sections we checked off and

see if you still consent in the same way as before we started. It's perfectly OK to change your mind on any of this. [At this point, confirm all the checkbox decisions with the participant.]

APPENDIX G: PERMISSION FROM COPYRIGHT HOLDER

12th December 2019
Department of Geography and Planning
University of Saskatchewan
Saskatoon, SK Canada

Dear Dr. Blackstock,

Re: Request for Copyright Permission for Educational Use

I am contacting you as a PhD student of the Department of Geography and Planning at the University of Saskatchewan, to request permission to reprint in my PhD thesis entitled "Les *Michif Aski ~ Métis and the Land.* Perceptions of the Influence of Space and Place on Aging Well in Île-à-la-Crosse," your ecological model developed for as part of your Breath of Life theory.
Blackstock, C. (2007). The breath of life versus the embodiment of life: indigenous knowledge and Western research. *World Indigenous Nation's Higher Education Consortium Journal*, 67-69.

This material may be provided in print or digital format to the University of Saskatchewan Library and also made available on the internet for access to the public via the university's library website (HARVEST). This request statement will appear in my thesis, acknowledging your copyright ownership and grant of permission will appear with the selected material. If you prefer that statement appear in a specific manner/format, please let me know.

If you are not the copyright owner or this work or cannot act with the authority of the owner to grant copyright permission in the manner requested, please let me know.

Thank you for your time and consideration. If you have any questions, or require additional information, please contact me at b.owusu@usask.ca.
Sincerely,

Boabang Owusu

Permission granted for the use requested above by Dr. Cyndi Blackstock on 12th December 2019.